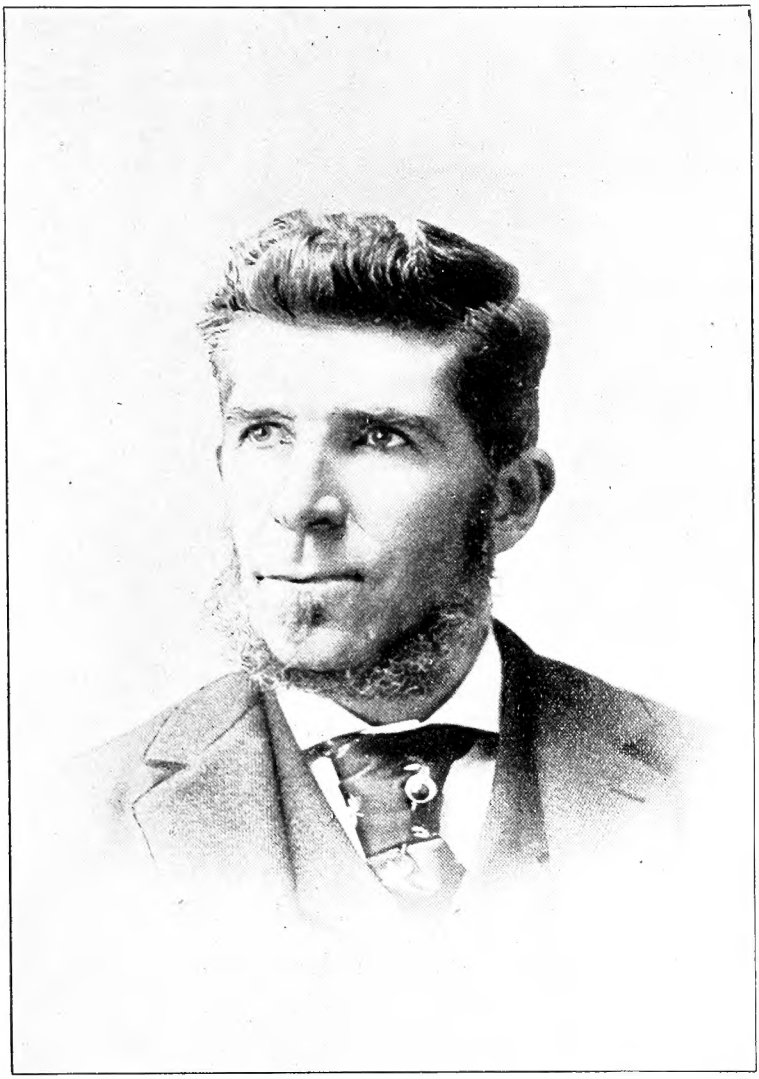

Yours truly
John Thorpe

THE AMERICAN

Chrysanthemum Annual

1895

EDITED BY

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PREFACE.

MANY of our most prominent Chrysanthemum growers have felt the need of a publication in which comment on the principal matters of current interest could be preserved in a form convenient for reference purposes, and they have at various times warmly urged the establishment of some such work as the Annual aims to be, viz., a repository of information on all questions relating to the flower of autumn. I have no desire to ignore the excellent work which is being done by our horticultural and floricultural journals; but it is felt that the pressure of other weighty subjects does not permit the editors of those papers to devote that space and attention to the Chrysanthemum which its growing importance demands, hence this production.

I feel grateful to the numerous friends in all parts of the world who have so ably helped to make this issue of the book worthy of the flower; to the Mayflower Publishing Company for most cordial and generous support in the undertaking, and to the Union and Advertiser Company, of Rochester, N. Y., for the excellent style in which the mechanical work has been executed.

MICHAEL BARKER.

ITHACA, N. Y., April, 1895.

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—THE AMERICAN—

Chrysanthemum Annual

THE FLOWER FROM THE EAST.

FROM East to West the tide of progress flows,
Still moving with the circle of the sun.
From Egypt's sands and from the Assyrian plains
The wave of conquest and the arts of war
Passed on to Greece and Rome, to Frank and Gaul.
When the great Spanish Captain, for whose soul
The seaways of the ancients were too small,
Set forth to find new worlds upon the wave,
He flung his sails to catch the sunrise winds
To waft him to the undiscovered West,—
The West, the sunset and the Great Unknown.
At length, as ever to the West he swept,
O'er the broad waters of the untracked main,
Up rose the vision of a distant shore,—
The Realm of Infinite Promise, blue Atlantis!
Thus westward ever moves the conqueror.

But not alone by force of arms and war
The tide of conquest to the sunset flows;
But creeds, philosophies, and schools of thought,
And the soft arts of peace, from eastward come.
And here I hymn the praise and sing the fame
Of a fair victor from the sunrise lands,—
The gracious mother of a peaceful craft,
A conqueror of men's hearts,—the flaunting flower,
Star-like and of innumerable hues,
Whose sunny home amid the ancient East
Is the ancestral isles of far Japan.

A universal language is the love
Of flowers; a tongue by all men understood,
Linking in universal brotherhood
All nations, and all races, and all creeds.
Laughing to scorn the curse of Babel's pile,
It fosters in man's soul the love of Beauty,
And hence, unconsciously, of the Divine;
For beauty is the symbol and the type
Of perfect spiritual harmony.
It ministers to culture and to art,
Unyoking from man's spirit many a care;
Bringing him in touch with balmy air,
And summer sunshine, and the song of birds.

And of all flowers that spring from mother earth,
None is more fair than this from far Japan.
It is the queenly victor of all hearts;
And since all nations are its willing slaves,
A conqueror than Semiramis more great,
Fair fortune to this fair flower from the East!

—**Percy T. Ingram.**

THE PAST SEASON.

A GREAT deal of progress has been made in Chrysanthemum matters during the past year, and the friends of the flower in every quarter have reason to feel proud of the good work that has been accomplished. Some of the comparatively recent departures in methods of culture are yielding good results, more particularly the bench and bed systems. These, however, are essentially the methods of the florists, whose principal aim is to produce good marketable flowers. It is a pleasure to note genuine progress in any department; but when advancement in one particular is accompanied by neglect, not to say retrogression, in others, the outlook is hardly so satisfactory. And it must be candidly acknowledged that all types of Chrysanthemums, except those that produce the largest and showiest flowers, have been neglected. Several of the contributors to the present volume have noted with regret the marked tendency in this direction, and many others whose names do not appear here have written repeatedly in the same strain. But the florists are not to blame; like exemplary men they are attending assiduously to their own business, and with such result that their products are crowding out of the market, and I may say out of cultivation, those groups of varieties the neglect of which is so universally decried. It is also urged that the horticultural and Chrysanthemum societies are at fault in not offering suitable prizes for plants and blooms of all the types. The florists, it is held, by strength of numbers, rule in most of the societies, and arrange matters so that the monetary and honorary awards will be conferred on their favorites.

This is an absurd view of the case, and one that most certainly can not commend itself to those who really know something of the opinions and actions of our commercial brethren. They are a most self-sacrificing body of men, who are at all times anxious to do anything and everything in their power to promote the interests of horticulture and floriculture in the widest aspect of those terms. They devote many precious days to the consideration and solution of very perplexing problems to the advantage of the entire gardening public. The exhibitions, with the management of which they are concerned, are regulated to meet the requirements of every individual so far as may be practicable; and if the arrangements are not at all times perfect, the fault lies with the amateurs and other grumblers who see so many glaring blunders, and yet never enter the societies to help with their judgment and counsel. Advance, ladies and gentlemen, and call attention to the errors you see so plainly. I have yet to learn of one horticultural or floricultural society from which any of you who take a genuine interest in gardening will be excluded. Then join the societies and help with the work. Tell the florists plainly what you think of them and their methods, and I will guarantee you respectful attention on their part, and their heartiest assistance in making any worthy change you can suggest.

In this connection, however, it is gratifying to observe that the pompons, perhaps the most deserving of all the neglected sections, are coming to the front again. Messrs. Pitcher & Manda, of Short Hills, N. J., have a very pleasing and truthful colored picture of them in their current catalogue, and while this is only a small matter, it shows something of that desire on the part of all nurserymen and florists to meet the needs of the public. The great difficulty is to get at a proper understanding of the demands of a community, and there is no better way of giving publicity to this than by gathering the interested parties together in a local society, and therein giving full expression to individual ideas. Six or eight interested ladies or gentlemen may start such a society; the local florists will help, and specialists in distant cities, if properly approached, are always pleased to assist young societies by contributing material of the highest excellence for exhibitions. All the great Chrysanthemum and other special floral societies throughout the world have set out upon their prosperous careers in some such small way, and there is still abundance of room for others like them.

Such societies indeed are now fairly numerous in all parts of the country, and the Chrysanthemum is by no means neglected in the exhibitions, although there is practically unlimited room for extension. The historians tell us that the first Chrysanthemum exhibition in America was held in Boston in 1868, with prizes to the amount of fifty-five dollars, but last year there were upwards of fifty such exhibitions in various parts of the United States and Canada, and the smallest one of these was vastly superior to the earliest attempt. As a further illustration of the rate of progress, it may be mentioned that while the Massachusetts Horticultural Society offered only fifty-five dollars in prizes for Chrysanthemums in 1868, the amount awarded by the same society in 1894 was $1,147, exclusive of numerous gratuities which are not given in the regular prize list. But this should not be taken as a proof that large money prizes are essential in starting an exhibition; ribbons of various colors, and appropriately inscribed, will serve the same purpose for the first two or three years, introducing money, medals and other more costly prizes as the society grows sufficiently strong and rich to afford them.

The improvement of varieties continues, as will be seen from our illustrations, all of which have been faithfully reproduced from photographs. The growers of seedlings bid fair to establish a race of Chrysanthemums that will produce flowers of the highest quality on dwarf stems of stout build, flowers in fact that will stand anywhere on their stems as well as on their merits. The blooms are also progressing in size, form and general finish—that is, the blooms of the large flowered kinds—but so far there is no very decided advance in color. There is still room for improvement among the pinks and crimsons, and, of course, the Anemone, pompon and single groups are open to all the good influences of the hybridizer. The reports of the behavior of the American seedlings abroad are very encouraging,

and in many cases surprising. While our best varieties rarely succeed so well in other countries as they do at home, those of medium and even inferior quality often make quite a respectable showing at the foreign exhibitions, and indeed a great many of our older varieties are now seldom heard of except through the reports of such exhibitions, or through mention in the catalogues published abroad. There is a large and increasing demand for good seedlings in Europe and elsewhere, and our raisers should look to it and see that nothing is discarded which, although not suited to our climate, may prove of value under other conditions of atmosphere and cultivation.

There has been much complaint about the dispatch of new varieties from America so late in the season that nothing of value can be done with them in foreign countries until the following year. This means a serious disappointment to the purchaser, and ultimately perhaps a great loss to the distributer. It could easily be remedied by making arrangements with agents abroad, and forwarding stock plants in autumn, instead of waiting for the weather of the following spring to open up so as to permit of the shipment of young stock. Every such delay entails the loss of a season to the American raiser, and a corresponding gain to his European competitors. And the American growers must now look well to their laurels, for there is great activity at the present time among those of England and France. The triumph of the season was scored by Mr. Hugh Graham, of Philadelphia, Pa., in being awarded the highest honor at the disposal of the National Chrysanthemum Society of England, for blooms of his splendid new variety, Philadelphia, grown in this country. It remains to be seen, however, whether this grand example of the work of American seedling raisers will retain its supremacy under the fickle skies of Great Britain ; but to grow the flowers here, ship them to Europe, and then, in the headquarters of all that is best in the wide world of Chrysanthemums, to secure the highest award, was truly a laudable achievement.

-M. B.

IN ENGLAND.

The December show of the English National Chrysanthemum Society—last year held on the 4th of that month—is generally accepted in this country as the close of the Chrysanthemum season, and, competition over, the time at last arrives when the floral athlete may rest from the conflict and survey the position, not only in reference to the past season but with a view to the renewal of the battle in the coming year.

What have proved to be the best varieties for exhibition? What the most enduring, in public esteem, of the established varieties? Again, which are the most desirable of the numberless aspirants for favor amongst the armies of new varieties which seem to be marching upon us from the four quarters of the globe? These are the questions which now present themselves to the mind of the exhibitor.

Then comes the after-thought: How has the late season affected certain of those varieties with which our acquaintance is at present but scant? Has it seemed to give them a fair test, or should we submit them to further trial upon discarding those which have given us results more or less disappointing? And we have, naturally, looked for great things in some cases, by reason of the reports which have reached us from their country of origin—notably from the United States. And so we have to look into matters a little closely, for there can be no question of the fact that a good selection of varieties is half the battle fought.

Well, the seasons in England in 1893 and in 1894 have been less of the "sample" character than usual. We have had things more "in bulk" and wholesale. The year 1893 presented us with a drought phenomenal in its intensity and endurance, while 1894, in its later period, made up in many districts all the water held back in 1893, with a good contribution towards any deficit which might occur in 1895. And, again, while the months of August, September and October, in 1893, furnished us with 445 hours of sunlight—and pretty good sunlight, too, for this country—1894 provided us, during the same period, with but 247 hours, and even these, with a sunlight of somewhat watery and diluted character.

And so it follows that neither year provided us with what may be called a typical season. It is quite within the bounds of possibility, therefore, that certain varieties having a deservedly high reputation on the other side of the Atlantic may yet, in a typical season, fully justify in this country the reputation which came with them.

However extreme in certain respects as was the season of 1894, it unquestionably suited some varieties perfectly ; indeed, by far a larger proportion of varieties, especially in the Japanese sections, were suited by the wet and sunless summer than received injury therefrom. This, of course, applies to those varieties the character of which is already well known on our side ; but what may have been the effect on the American new varieties we can only hope to assist to a conclusion by sending across the Atlantic an account of their behavior in English gardens under the climatic conditions which have prevailed ; and this, to the best of my ability, I propose to do.

But my American friends may first like to have some information as to the relative positions in this country of the whole of the varieties, from whatever source, which are more or less favorably regarded by our growers for exhibition.

Unfortunately, a clue in the direction indicated is not afforded by the proceedings of the floral committee of the National Chrysanthemum Society, for the fact undeniably is that for some reason or other not quite clear, the decisions of the floral committee have not received, to the extent which is desirable, that confirmation and support on the part of the general body of exhibitors which is furnished by the subsequent appearance upon the exhibition stand of the varieties certificated. Too large a percentage of these varieties do not appear to secure public attention after their first appearance in the committee room. Possibly the dark and unsuitable chamber—I was on the point of writing dungeon—sometimes used by the committee may be responsible for the result, or it may be that the *personnel* of the committee is not in sufficiently keen appreciation of that

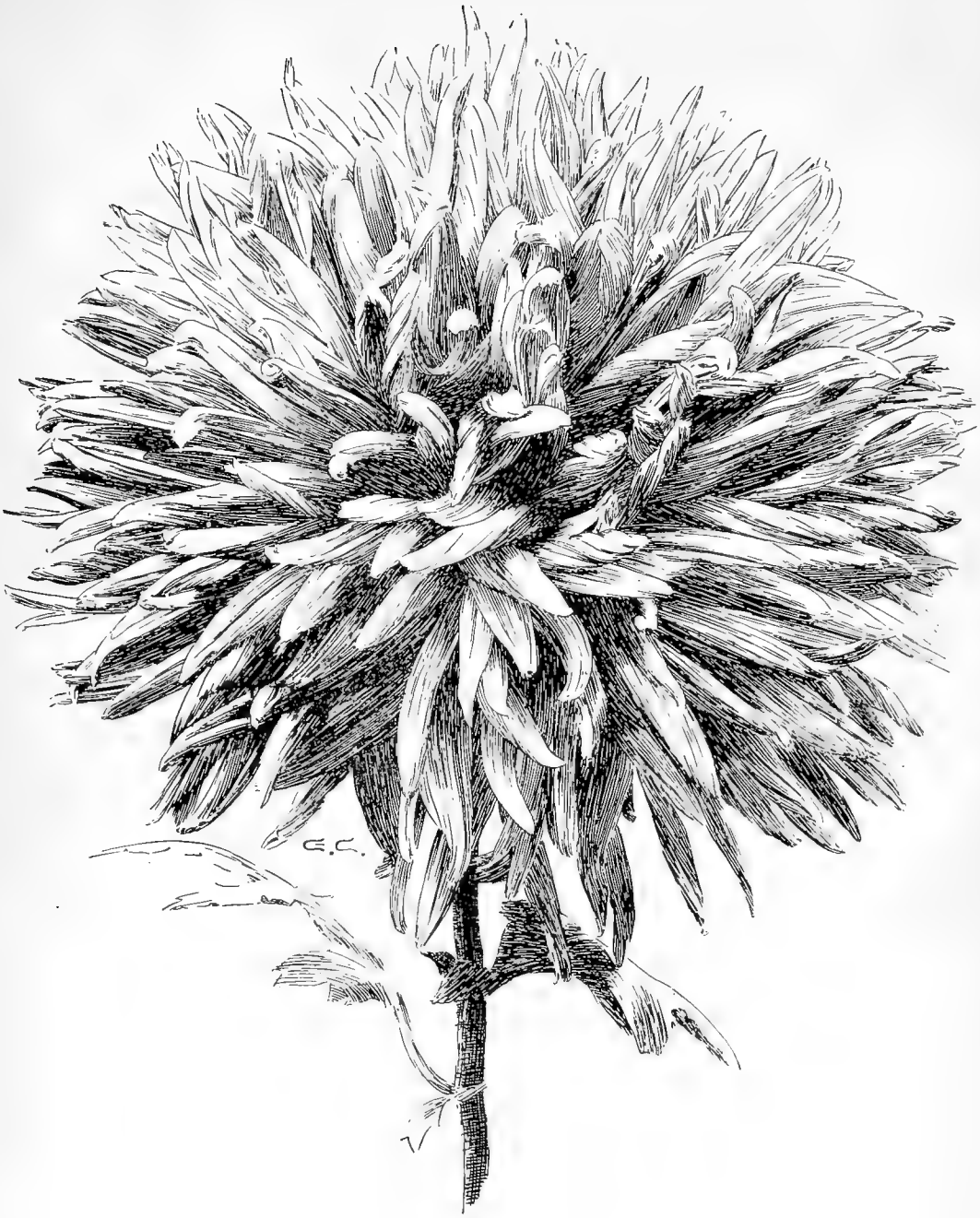
standard of excellence which finds general acceptance with the exhibiting public, but the fact remains as I have stated. I do not say that the leading varieties have not been certificated—most of them have—some before and some after they have received the seal of public recognition of their merits; but it is also unquestionably the fact that a very great many varieties certificated are practically never seen at all upon the show boards, or have a very ephemeral existence there. I state this so that growers on the other side may not be misled by an overestimate of the meaning of a certificate of the floral committee of the National Chrysanthemum Society.

But there remains that which after all is really the best test of the suitability of a variety for exhibition, namely, the outcome of the struggle for existence on the exhibition table. We have in these results the opinions of no narrow section, but the practical evidence of the views of those whose one object is to do the best they can to win in the floral contest. And so an audit of the varieties appearing on sixty of the first prize stands, taken from the leading shows throughout the United Kingdom, will serve to indicate which have been the favorite and most reliable varieties in the season just closed, so far as this country is concerned.

The following relates only to Japanese varieties:

Name.	*Times Exhibited.*
Charles Davis	51
Viviand Morel	46
Mrs. C. Harman Payne	45
E. Molyneux	39
Mdlle. Therese Rey	36
Sunflower	35
Mdlle. Marie Hoste	35
Etoile de Lyon	31
W. H. Lincoln	30
G. C. Schwabe	27
Miss Dorothea Shea	25
Florence Davis	25
Avalanche	23
Col. W. B. Smith	23
W. Tricker	22
Stanstead White	20
W. Seward	20
Mrs. Falconer Jameson	18
Mrs. E. W. Clarke	18
President Borel	15
Louise	15
Princess May	14
Duke of York	14
Primrose League	13
M. Panckoucke	12
Excelsior	12
Viscountess Hambledon	11
Boule d'Or	11
Gloire du Rocher	11
W. W. Coles	10
M. Bernard	10
J. Shrimpton	9
Mdme. C. Moline	9
Amos Perry	9
Niveus	7
G. W. Childs	7
Souvr. de Petite Amie	7
Silver King	6
J. S. Dibbens	6
Alberic Lunden	6
Eda Prass	6
Waban	6
H. L. Sunderbruch	6
Mdme. A. E. Carriere	6
G. Shrimpton	5
Prefet Robert	5
Lilian B. Bird	5
Vice-President Audiguier	5
Mdme. C. Capitant	5
International	5
Annie Hartshorn	5
Mdme. Octavie Mirabeau	5
Mdme. A. Chatin	5
Beauty of Exmouth	4
Kentish Yellow	4
Beauty of Castlewood	4
C. Blick	4
R. Brocklebank	4
Le Prince du Bois	4
Mrs. Hubbock	4
Condor	4
Violetta	4
R. Owen	4
Puritan	3
Mdme. Ad. Giroud	3
Van den Heede	3
Golden Dragon	3
Lady Saunders	3
Mdme. Carnot	3
T. Wilkins	3
Good Gracious	3
Duchess of Devonshire	3
Mdme. Audiguier	3
Lord Brooke	3
Thunberg	3
Golden Gate	3
Princess Victoria	3
White Louis Boehmer	3

It will be seen from the above list that honors are fairly divided between England, the United States, France and Japan. Perhaps the most striking point in the above (probably due to the season) is the tremendous fall in the position of Lord Brooke (*Pitcher & Manda*) which was in the first eighteen last year. Golden Gate (Japan) is a very late variety, as is Robert Owen, both of which appeared in fine form in December. So also did Silver King (English). Surprise will probably be felt at the position of Mrs. C. Harman Payne; but unfortunately so many judges at shows favor mere size, however accompanied by coarseness, that such varieties are still sought after.



EZETA.

NATURAL SIZE.

Dealing with essentially American varieties, the following have been suited by the season, and have been shown in excellent form :

W. W. Coles. *Craig.* Especially in Scotland and the north of England.
Niveus. *Smith & Son.*
Primrose League. *Pitcher & Manda.*
Sarah Hill. *Spaulding.*
Waban. *Fewkes.*
W. G. Newitt. *Hill & Co.*
C. B. Whitnall. *Hill & Co.*
E. Lonsdale. *Waterer.* Good in the north, but lacks size in the south of England.
Garnet. *Spaulding.* An old variety which has been very fine.
Silver Cloud. *Spaulding.*
Mrs. E. D. Adams. *Pitcher & Manda.* Late in the season very good.
Mrs. D. Ward. *Pitcher & Manda.*
A. T. Ewing. *Hill & Co.*

Later American novelties which were well shown in 1894 :

H. L. Sunderbruch. *Walz.* Unfortunately with us of a weak constitution
William Bolia. *Walz.*
The Queen. *Walz.*
Dr. H. D. Hull. *Smith & Son.*
Abbie Mendenhall. *Hill & Co.* Very fine.
Sir E. T. Smith. *Pitcher & Manda.*
Duchess of Wellington. *Pitcher & Manda.*
Mrs. W. H. Lees. *Pitcher & Manda.*
Mrs. J. G. Ils. *Sievers.* One bloom shown was splendid.

Older American varieties which appear not to have been suited by the season.

William Tricker. *Surnam.*
Col. W. B. Smith. *Spaulding.*
Beauty of Castlewood. *Spaulding.*
Mrs. Charles Wheeler. *Waterer.*
The Tribune. *Pitcher & Manda.*
Miss Annie Hartshorn. *Waterer.*
Mrs. T. Denne. *Pitcher & Manda.*
G. W. Childs. *Thorpe.*
Eda Prass. *Dorner.*
Lord Brooke. *Pitcher & Manda.*
President W. R. Smith. *Hill & Co.*

It has been a curious result of the wet and sunless season that those varieties which are inclined to the incurved section of the Japanese, for instance Lord Brooke, William Tricker, Miss Annie Hartshorn, etc., have come loose and more or less reflexed, their usual incurved character being in cases almost lost. The whole of these varieties have declined in position in the audits of 1894, as compared with those of 1893.

Varieties having special repute in America, but not so far appearing to realize expectations in England.

Harry E. Widener. *Hill & Co.*
Harry May. *Pitcher & Manda*
Black Beauty. *Hill & Co.*
Robert McInnes. *Hill & Co.*
Wyndmoor. *Spaulding.* Bad grower.
Mrs. Jerome Jones. *Vaughan.*
Roslyn. *Spaulding.*
Emma Hitzeroth. *Spaulding.*
Ed. Hatch. *Hill & Co.*
Emily Ladenburg. *Spaulding.* Bad grower.
Harry Balsley. *Smith & Son.* Bad grower.
Mrs. J. W. Crouch. *Hill & Co.* Bad grower.
Brydon Junior. *Spaulding.* Bad grower.
Olga. *Vaughan.*
Maud Dean. *Hill & Co.*
Ruth Cleveland. *Spaulding.* Very uncertain

I have excluded from the above all those varieties, so far as known, which reached this country from the United States, but which were derived originally from Japan, such as Golden Gate, Lilian B. Bird, Golden Wedding and Hairy Wonder.

Exhibitors in this country necessarily rely to a great extent for their new varieties upon those countries having climatic conditions more favorable to the raising of seedlings than has the United Kingdom, although of late years great progress has been made in this country. Still, France, and above all the United States, must retain for a long time to come the lead which has been obtained, and to those countries we must mainly look for new recruits to the army of varieties.

—**Charles E. Shea.**

Foot's Cray, Kent, England.

EARLY AMERICAN HISTORY.

ANYONE who has ever interested himself in the early history of horticulture as a whole in this country, to say nothing of the individual history of flowering plants—when introduced, whether by seeds or the plant itself, and by whom—if his inquiries go back beyond say 1835, when our first horticultural magazine was started, or seven years before, when the first agricultural paper appeared, he will find but little to pay him for his trouble ; and in the case of many plants can at best only proceed by inference of such as he is seeking from the incidental mention of others in letters to European countries, notes of travelers and memoranda of such kinds, there being nothing whatever of a general botanical or horticultural character to guide him in his investigations. Nay, more, as fruits and vegetables, or something to sustain the sturdy pioneer was of far more consequence than mere flowers in those days, he will search in vain for very much to aid him in way of Chrysanthemum lore for the first twenty years,

even after Hovey's and Downing's magazines were first published, and that from the simple fact that the flowering of this well-named autumn queen occurred at a time of the year when most shows and gatherings of the period were over for the season ; and were it not for the occasional meetings of such organizations as the Massachusetts, New York and Pennsylvania horticultural societies, there would be absolutely nothing of a reliable character open to consultation.

It is highly probable that in some of the old colonial homes of Maryland, Virginia, and the like, our now popular flower of the autumn exhibitions was a noted garden favorite, as it had become in the more vigorous eastern Atlantic states, when greenhouses were little more than half-opaque orangeries, and even structures of such unsatisfactory character few and far between. The late Shirley Hibberd is authority for the statement that the Chrysanthemum was introduced into America about 1820, or earlier ; but so far as we have been able to trace, it is not until 1826 that we have actual evidence of the presence of the plant in this country. A Mr. Prince, writing under date of February 14th, in that year, and describing the stock cultivated in his nursery at Flushing, N. Y., among many other plants enumerates thirty-two varieties of the Chrysanthemum.* It was only seven years previous, or in 1819, that the late Samuel Brookes, then of London, England, received an assortment of new varieties from his collector, Mr. Poole, who had been sent expressly to China in search of them. This Mr. Brookes—who settled in Chicago in 1833, and died there September 5, 1875—was a much respected florist during the period of his residence in this country, and he has been called the father of the Chrysanthemum. "At the time of his decease," writes Mr. C. Harman Payne, "there was probably no other man who could claim to have been acquainted with the Chrysanthemum for so long a period."

The varieties in cultivation, named in part or distinguished by the color and form of the flowers, as the special naming of sorts did not take place until many years later, are given the first year after the incorporation of the Massachusetts Horticultural Society, in 1829—probably at the November meeting of 1830—as follows: Quilled Flame, Curled Lilac, Tasselled White, Golden Lotus, Large Lilac, Changeable Buff, Paper White, Crimson, Pink, Lilac, White, Semi-Quilled White, Parks' Small Yellow, Golden Yellow, Quilled Lilac and Quilled White. This society, by the way, also made the first appropriation for plant and flower premiums about the same time, although it is hardly likely that the Chrysanthemums of the period were considered worthy of such honors, at least there is no mention of any award being made. The chronicles afford nothing of interest again until the year 1844, when, in further reference to the Boston society, we are told: "The show of Chrysanthemums on November 2d was very fine." Not to be behindhand, the Pennsylvania Horticultural Society, on November 17, 1846, awarded Benjamin Gullis, gardener to Jacob Snider, Jr., three dollars for the best twelve named varieties, and a second prize of two dollars to Archibald Henderson. The committee also mentions "the general fine display" of the coming flower.

In the second volume of the "American Horticulturist," 1847, a notice is given of a visit that year to the fine conservatory of N. Becar. Esq., of Brooklyn, N. Y., with comments on a new Chrysanthemum which had been received there under the name of William Penn. This is described as a remarkably fine variety, and proceeding, the writer adds: "One of the most perfectly formed flowers of the genus we have ever seen ; each blossom very full double, symmetrically shaped and almost globular in form. The color white ; and it is, on the whole, much superior to any of the new European varieties of this old autumnal favorite which have reached us." Here, then, is a fine beginning ; and on extended search we find that this notable flower was raised by Robert Kilvington, an enthusiastic gardener of Philadelphia. It was exhibited by him for the first time November 16, 1841, before the Pennsylvania Horticultural Society, and was awarded a prize as the best American seedling, the committee reporting "that this prize seedling Chrysanthemum is decidedly the finest variety ever presented to this society." Thus we are carried back to 1841 to learn that the art of raising seedling Chrysanthemums was probably well understood by American gardeners in the latter part of the decade preceding that time.

Early indices are a source of much perplexity to the enquirer. Very often there is no index record of important matter, and much interesting information is sometimes found under a title altogether foreign to our subject. The index to the first two volumes of the "American Horticulturist" affords no data ; but the third volume, 1849, would indicate an inclination on the part of the editor to do something for our favorite, as he copies from a London horticultural magazine a long article by George Glenny on "The Chrysanthemum and Its Culture," with a list of varieties selected from Glenny's standpoint in floricultural matters. Another volume records that Robert Fortune had discovered the first of the pompon varieties and forwarded them to Europe. In his preface to the fifth edition of "Buist's Flower Garden Directory," which appeared in 1851, the first edition having been published in 1832, Robert Buist mentions the Chrysanthemum, which is something. On turning to page 36 of this book we find that he gives as suitable for garden culture quite a list of varieties, but not a word about them as pot plants, or for the greenhouse. Another authority of 1851 is Breck's "Book of Flowers." But here, also, the thought evidently runs on garden culture only, concluding: "The varieties are endless, early and late, tasselled and quilled, flat petalled, etc., with every shade of color, light purple, yellow, white, lilac, blush brown, red brown, etc."

The "American Horticulturist," in its volume for 1852, has five index references to Chrysanthemums, and in the text there is mention of fifteen varieties—nine of the large-flowered and six of the pompon sections. The "Philadelphia Florist" appeared in this year, and to the first volume, page 265, Horticola contributes a dissertation on "The

*Gard. Mag., Jan., 1827, p. 90.

J. H. TROY.

NATURAL SIZE.

Chrysanthemum," covering almost two pages. The same volume of this journal also contains an excellent article on "The Chrysanthemum, its Habits and Cultivation," by B. F. Norton, of New York, with a list of nineteen dwarf varieties, and reference to thirteen other sorts. The editor draws the attention of his correspondent to the fact that he did not state which of these are large varieties. This important article, from an American point of view, is entirely ignored in the index. Here, also, may be found an advertisement of Thomas Hogg & Son, of New York, in which forty-eight pompon varieties, to name, are offered for sale. The special advertising of the Chrysanthemum at this early date is very rare ; and, by having the advertisements bound with the more important literary matter, we run across one other instance of it, but only one. This was by Grant Thorburn & Co., in which occurs our old friend Bob, a Chrysanthemum that created as much fuss in its day as any of the big flowers do now. Usually, if alluded to at all, the advertisements would simply read, ' and Chrysanthemums," as did the catalogues, very often; our first, that of James Wilson, of Albany, N. Y., dating away back to 1842. If Prince & Co. could catalogue, as they did in the forties, no less than sixteen hundred Roses, we may be certain that they also catalogued Chrysanthemums, even though we cannot at this time lay hands on the list.

There is a long list of the prize sorts then grown in England in the "American Horticulturist" of 1855, and the same volume contains an article eleven columns in length, to the effect that the Chrysanthemum was becoming extremely popular at that time, new interest having been created in it by the increase of varieties and by improvements in knowledge as to the methods of cultivation and training, mentioning, for example, the use of ten-inch pots, with the plants so grown as to hide these pots with foliage, and presenting more the appearance of a well-grown Azalea than a Chrysanthemum under ordinary management. The plants, it appears, were perfected by judicious training in August, after they had received their final shift. They are described as being a literal mass of flowers, where none of their buds had been thinned out, as was sometimes done in a case of plants for exhibition, when only one bloom was allowed to grow on each plant. This shows that the idea of growing plants to a single stem is by no means of recent origin in this country, but that it was practiced by our Chrysanthemum growers at a comparatively early period. Thus does history repeat itself, and manufacture new surprises; for it is certainly astonishing, after all the promise of permanent popularity given to the Chrysanthemum in the foregoing notes, to find that the index of the "American Horticulturist" as late as 1860 contains not a single reference to the plant. With other publications of this year, we take up "Shepherd's Handbook," something after the fashion of Prof. Bailey's modern "Annals of Horticulture," which gives a list of the new plants ; and among those introduced during the season, including many sorts of the more popular florists' flowers then in cultivation, we find an annual Chrysanthemum, but not a sign of the perennial varieties. The "American Horticultural Annual" of 1871, in the almanac style—a form of garden literature which was first issued in this country about 1854—is the earliest of these yearly productions to publish a list of Chrysanthemums, and that, consisting of nine Japanese varieties, supplied by the late Peter Henderson.

Starting then, say in 1820, the first decade has very slight notices of our flower in any form, but sufficient to show that it was here, and growing in interest. In the next decade, ending 1840, seedlings of merit were grown and prizes awarded in a small way. The plant is still prospering in 1850, but so far mostly as a border or garden flower, where the autumn weather is sufficiently open to permit of its cultivation. Toward the close of the succeeding decade, or 1860, when private gardens of considerable pretensions had become fairly numerous throughout the country, it was considered useful as a greenhouse plant, and this even as far west as Cincinnati and Chicago, and exhibits were sometimes awarded prizes by the societies then established. The first regular Chrysanthemum exhibition in America was held under the auspices of the Massachusetts Horticultural Society in 1868, with premiums to the amount of fifty-five dollars. In 1870, as everybody knows, no respectable greenhouse was without at least a few representative varieties, and, although yet far from its present popularity, it was steadily tending in that direction, until a new and wider interest was awakened by the introduction of Mrs. Alpheus Hardy, where, for the time being, we must leave the glorious company of mummers and their favorite flower

Chicago, Ill. —**Edgar Sanders.**

SPECIMEN PLANTS.

WHEN a boy, now more than thirty years ago, I remember a few pompon varieties of the Chrysanthemum growing in the angles of our porch. They were called Michaelmas Daisies, then a common name for them in the North of England. Above all the immense and gorgeously colored greenhouse varieties, the charm of these few naturally grown plants remains to this day. They braved the snow and rain and in the crisp autumn weather, when all other plants were out of bloom, they were very beautiful. Their odor, too, was decidedly strong, and had a distinct fascination for me. In this respect the Chinese varieties are, I imagine, more aromatic than the Japanese.

In the earlier days of Chrysanthemum culture, very little effort was made by special means to increase the size of the blooms. The Chinese varieties, particularly those known as incurved, were in the majority, and in England these kinds still occupy a prominent position in all collections.

They are very seldom grown in this country, and various reasons are given for this neglect. It has been ascribed to a lack of taste, and that here, among a people not far enough advanced in the floral arts to appreciate the finer lines of the Chinese varieties, nothing but large flowers find favor. I do not, however, think this is the reason entirely. The fact is, our climate is not so well suited to them as to the more robust Japanese, and the best varieties generally lose their distinctive, incurved character with us. A frequent complaint is that they do not fill out the center of the flowers. This, however, may be explained in that all Chrysanthemums under our sunny autumn skies have a tendency to produce seeds, and hence the flowers expand to permit insects and the wind to distribute the pollen among the fertile florets, which are located deep in the center of each bloom.

My practical acquaintance with Chrysanthemums began in 1876, when such varieties as Beverley, George Glenny, James Salter, Hero of Stoke-Newington, Mrs. George Rundle, Lord Derby, the Christines, yellow, white and pink, were at the zenith of their fame. I had charge of a collection of plants grown in ten-inch pots, each having about fifty blooms, and I thought these specimens were as perfect as they could be. Later in the course of my gardening career, I was chiefly engaged in branches of the profession which did not include work among Chrysanthemums, but I always cherished a desire, when circumstances turned favorable, to take them in hand again, and during the past decade I have had abundant opportunity to gratify my wish. With the increase in number of varieties, mostly of the Japanese section, has come a sweeping change. Growers of specimen plants are in a great minority, probably not more than a dozen persons in the United States being specialists in this line. The number of first class varieties adapted for growing into specimen plants is very small, and this is accounted for by the fact that the producers of new varieties select only such seedlings as bear flowers of large size, and are therefore likely to gain honors as specimen blooms at the exhibitions. The various horticultural societies should insist upon it and see that their judges have a proper supply of material to enable them to reach a just and decisive conclusion as to the merits of new varieties in all their aspects, embracing plants as well as cut blooms.

Varieties suitable for specimen plants should be of medium height, and the stems well clad with healthy foliage. The flowers should be erect, full, double, of medium size, and distinct in color. I make a trial of twenty five or more new varieties every year, and if out of this number two of sufficient merit to be tried again are secured, I am doing well. It will be said, perhaps, that I am fastidious, but this is the only way to arrive at success in the cultivation of specimen plants. There is before me a list of varieties, recommended by a well-known florist, which I will briefly analyze in order to show what I mean. From sixteen whites I select two first class, Ivory and Joseph H. White; Minnie Wanamaker is good, and Annie Manda, fair. Louis Boehmer and Etoile de Lyon are the best of fifteen pink varieties, W. H. Lincoln the only good one of fourteen yellows, and G. W. Childs the most reliable of ten reds and other colors, the latter, however, by no means an ideal variety. It is next to impossible to select good varieties for plants from specimen blooms, but this is what many do. Ask any leading dealer to make a selection for you, and if he is honest, as one I know, he will say he is not acquainted with them as such.

Here is a small list of varieties which I know will make good plants. White: Ivory, Joseph H. White, Snowflake, Summit, G. Daniels and L. Canning; White Cap and White Gem for late flowering. Yellow: Clinton Chalfant, President Hyde, Golden Ball, W. H. Lincoln, A. H. Fewkes and the Anemone George Hawkins. Bronze: Golden Hair (orange) Walter Hunnewell and L'Incomparable. Pink: Iora, Portia (exquisite), Louis Boehmer, and for late flowering, Eda Prass. Crimson: Louis Menand and G. W. Childs.

The stock in hand can be cut down after the flowering season, kept in a cool, light place, and given as little water as possible, not more than enough to keep them growing slowly. Strong growths made during December should be cut back, as it is not desirable to propagate from these at any time. Cuttings of a sucker character are best. Opinions vary as to the proper time to insert cuttings intended for specimen plants. For many years I put them in about the middle of January, and while this gave them a longer season of growth, it often happened that cuttings taken so early ran to bloom when transferred to six-inch pots in March. With no preparation for replacing the plants, these varieties were lost for that season. Many of the best varieties bloom in this way, Ivory being a noted instance. My experience has been that cuttings struck about the middle of February make the best plants. Preference should always be given to root cuttings, over those produced by the stems, particularly if the former are of sucker origin. This is not always possible, and I well remember an old and very beautiful variety of a charming pink shade, Damio, now almost lost to cultivation, as particularly shy in producing cuttings of any kind. Very fair plants may also be obtained from leaf cuttings, taken with an eye. The new yellow sport, Mrs. E. B. Freeman, was obtained in this way. In 1893 my best flowers of Niveus, and in 1894 of Mrs. E. G. Hill, were from such leaf cuttings, and some of the latter, grown to crown buds, were exhibited in Boston, October 6th, and were awarded a first class certificate by the Massachusetts Horticultural Society. Cuttings taken from plants which have been grown cool are preferable. Many noted growers are now following this plan, growing their stock plants out of doors until autumn, when they are stored in cold frames until required. The reason so many varieties thrive so indifferently the first season is that they have been forced and propagated to exhaustion.

We use a general propagating bed where the bottom heat is steady at sixty-five degrees, with a minimum air temperature of fifty degrees. This insures quick rooting, and gives us space for other stock. Cuttings will root in a temperature as low as forty degrees, or even less, and in England it is customary in many places to insert them

in pots placed in cold frames. By this plan it is claimed that the plants are strengthened in constitution, but I am not aware that it makes much difference, especially in a plant that responds to good culture so quickly as does the Chrysanthemum. Cuttings should be prepared with a sharp knife, and shorn of a few of the lower leaves and the tips of the upper ones, which would otherwise hang about the base of the cuttings and encourage damping-off. They should be pressed firm in the soil, and placed so far apart that they will not touch; for when damping-off once sets in, it is almost impossible to prevent its spread throughout the whole bed. They will need a liberal supply of water for the first few days, and shading when the sun shines, for they must on no account be allowed to wilt. The cuttings should be rooted in three weeks, and may then be potted in small pots, using a rather light soil, not made very firm. Toward the end of March they will be well established, and may be transferred to six-inch pots, at the same time removing the tip of each plant. This will be the first stopping. A moderately rich compost should be used at this stage, pressed firmly if the soil is light, loosely if heavy. It is very important that the drainage be free at all times. The plants should be placed in cold frames, plunging them in sand or coal ashes, as soon as the weather permits, to encourage a good stocky growth. A consideration of no less importance than fine flowers is luxuriant foliage, furnishing the plants well down to the pots. Plants that have been forced in a close atmosphere, or unduly excited by stimulants during the earlier stages of their growth, never finish well.

About the middle of May, our plants are ready for the final shift into ten-inch or twelve-inch pots, in which they remain and bloom. Our soil is a light and moderately rich loam. Lime, in some form, should be an ingredient, and bone meal, lime rubbish, or wood ashes will answer this requirement very well. We also pot lightly and evenly at this stage. And now, as immediately after each potting, there is always danger of overwatering, a risk to be carefully avoided, since a serious loss of foliage is sure to follow. Later, when stimulants are applied, the plants will become water-logged unless the drainage is good, and this is an equally unfavorable circumstance. It is well to keep the plants in frames a few days, or until new roots are formed, when they may be plunged outdoors to the rim of the pots. As they will remain in the open until autumn, it is advisable to place them three or four feet apart, so as to give room for easy passage among them to attend to watering, stopping, staking and tying. Some means must be adopted to prevent earthworms working up from below, or they will work the soil into the drainage material and finally stop the vent. Slates and pieces of wood are objectionable, since they do not admit of a free passage of air and water. Something which will carry the base of the pots well clear of the soil is needed, and this we do by placing under them disks of earthenware, made for the purpose by a local manufacturer. Whatever success I have had, I attribute as much to this little device as to any other cause.

Stopping is an important operation, and one not generally understood. No regular time can be named for this work; it should be done almost every day, as soon as a shoot is observed outgrowing the others. The idea is to keep the plants evenly balanced It should never be necessary to stop a plant "hard," as the shoots thus treated do not break so well as when merely the tip is taken out. Neither can any date be named to discontinue the operation. Golden Ball, Ivory, Duchess of Connaught, L. Canning and W. H. Lincoln make good specimens naturally, and need scarcely any attention after July; while G. W. Childs, Mr. H. Cannell, Fascination and Cullingfordii should have runaway shoots stopped as late as the end of August. It need hardly be stated that a few stakes should be put in toward the end of July, so as to outline the plants and prevent their being broken by wind storms. It is seldom that insect pests give any trouble out of doors, except the chinch bug, which extracts the sap from the plants, causing them to wilt. Various insects, more particularly the nomad spiders and the lady birds, serve to keep these in check by devouring them. We also make a compound from three pounds of tobacco leaf and one ounce of sulphide of potassium, adding on application a tablespoonful of kerosene and twenty gallons of water. This we find is useful as a fungicide, as well as an insecticide. I noticed during the past summer that all the chinch bugs were driven off the plants sprayed with this mixture, and were found on those left unsprayed. One other little thing in this connection is worthy of mention, and that is, that so long as there was any corn in bloom in the vicinity we had no chinch bugs on our Chrysanthemums, but they returned to us when the corn ceased to flower. A good idea would be to keep corn planted in that part of the garden in which the plants are located. Frequent spraying on all bright days, and particularly during dry weather, seems beneficial. This tends to keep down insects, and to promote the growth of clean, healthy foliage.

The application of stimulants is a work requiring great care, and only experienced persons should be entrusted with it. The pots must be filled with roots, and the drainage perfectly free, to begin with. No excess of solid matter should be allowed to accumulate on the surface of the soil, as this also would prevent the ready percolation of liquids. If cow manure is used as a top-dressing, it would be best to dry it first, afterward breaking it into small pieces. This acts as a mulch and fertilizer at the same time. As a safe and lasting stimulant, however, we prefer sheep manure, which should be applied in the form of a top-dressing, adding a little sand and loam to keep it open. Liquid manure may also be applied if the plants continue healthy. It should be given often, say once a week at first, and two or three times a week later, but at no time very strong. Drainage from barns is one of the best fertilizers known, as it contains nearly all the ingredients of a complete plant food in a highly concentrated form. I seldom use it stronger than one part in twenty of water. If bituminous soot can be obtained, it is beneficial, and may be used with some device for filtering water through it. Manure from the hen-house is often helpful when used in

small doses, but dangerous in large quantities. Where lime is not an ingredient of the soil, a pound or two in the water once in a while will do good work. Sulphate of ammonia is sometimes used with wonderful results, but unless its strength is known, it is not quite safe. Among commercial fertilizers, guano ranks high. It does not, however, contain all the elements required, and so gives best results when used alternately with other manures. Guano is best applied in the liquid form, and while it may be safe to use more than one pound to fifty gallons of water, I confine myself to that limit. When administering artificial fertilizers, occasional plants will not be able to withstand the regulation doses, and this will be shown by the leaves turning pale green. These should be passed until they resume their normal color, and always subsequently a weaker mixture should be given them. At the same time, while clear water is being used, no more than about sufficient to keep them from wilting should be given. This gives the soil a chance to sweeten, or to return to its best condition.

What we aim at in specimen plants is to develop as many growing shoots as possible before the middle of August, arranging them so as to keep the plants even and regular in form. This adjusting of the shoots, and the incidental tying and staking, should be attended to every day, thus keeping the work well forward and affording the plants an opportunity to outgrow some of that stiffness which is characteristic of severe training. Very often these details are totally neglected until within a few weeks of the flowering season; and in all such cases, however carefully or artistically the work may be performed, there is always a glaring excess of artificiality in the appearance of the plants. Generally all the shoots on specimen plants are terminals, each bearing a cluster of flower buds at the extremity. I prefer to leave only one bud to each shoot, and this treatment is repaid by the production of an extra large flower. But it is difficult to persuade people to leave only one bud. I have noticed a tendency in a few varieties, more especially in J. Delaux, Arethusa, G. Daniels and Amber Gem, to show second crown buds at taking time. As this occurs when September is well advanced, I always take them. If they were removed, terminals would appear, but the latter so late in the season that it is questionable if they would develop flowers of as good quality as the crowns. I would advise the retention of all the crown buds that appear on specimen plants in September.

Feeding should continue until the blooms begin to show color. One good guide as to the action of the stimulants, in addition to noting the visible effects, is to observe whether new roots push through to the surface of the soil. Our plants last year filled with roots the space reserved for water to such an extent that, toward the latter part of the season, we were obliged to make a mould of plastic material, placing it inside the rim of the pots in order to increase their capacity. We used a mixture of cow manure and clay, and in less than a week it was literally white with roots, which held the material safely in position. The absence of these roots, taken in connection with a yellowish shade of the leaves, is a safe indication that the plants are out of health; and instead of increasing the dose of manure in such cases, it should be withheld altogether. If there is room in the pots, a light top-dressing of loam and sand would benefit such sickly plants, and I would recommend this treatment generally for all that are not doing as well as they should. Too much water and poor drainage are usually responsible for an unhealthy condition. The plants should be housed early in September. They might remain outdoors until frost threatened to make its appearance, but nothing would be gained by the delay. They are better under cover, and from the first of October onward a little fire heat should be given. This keeps the atmosphere dry, preventing mildew and damping-off. It is also necessary to admit abundance of air, but draughts from the windward side of the house must be strictly guarded against.

The month succeeding the middle of October is a time full of interest to all growers of specimen plants. It is also one of anxiety, for there is yet time enough to undo a whole season's work by a single blunder. Less water will be required as the blooms mature, but never so little that the foliage wilts. The roots may be injured by excessive supplies of water to such a degree as to be followed by a serious loss of leaves, and no treatment could now repair the damage. And if the plants are intended for exhibition, it may also be possible that the date is too late for some varieties, and these must be held in check. If it is possible, such plants may be removed to a cooler, shady house with advantage, otherwise they must be shaded with tissue paper, especially the pink-flowered varieties. Some yellows, such as Source d'Or, Ernst Asmus and President Hyde, soon let their florets droop, and in this condition look wretched. Again, others may be too late, which, if anything, is worse than being early. Chrysanthemums do not bear forcing well, in the ordinary way of increasing the amount of heat. Plants housed, and others of the same variety placed in a cold frame showed no difference in time of flowering, although the night temperature was about ten degrees higher in the house. One of the exhibitors at the recent Boston show was anxious to enter a plant of W. H. Lincoln, and placing it in a Rose house three weeks before the exhibition, failed to get it into bloom. Another plant of the same variety exhibited there in full bloom had never been forced in any way, except perhaps by a few doses of a chemical fertilizer, though it is doubtful if this hastened the development of the flowers. Both plants were in the same condition at the time stated.

In preparing plants to travel to exhibitions, we fill the spaces between the flowers with tissue paper, and gradually draw the stems closer until the plants are rigid. In this condition they travel well. In all my experience I have had only one plant spoiled in packing, and that was one of the old variety, Golden Dragon, the curled florets of which so far interlocked that we could not get them apart without mutilation. Had we made a separate parcel of each flower, as we did with Iora last year, not one would have been injured.

Wellesley, Mass. —**T. D. Hatfield.**

THE NATIONAL SOCIETY OF ENGLAND.

OF all the special institutions devoted to horticulture in its various branches, the National Chrysanthemum Society, by virtue of its wide-spread influence, its numerous members, its large annual revenue and its almost unlimited program of operations, best lays claim to be considered the chief. Its rate of progress during the past few years has no parallel in the annals of horticulture, and the executive may justly feel proud at the happy results which have been the outcome of their united efforts. At the close of 1893 it had completed the first decade of its existence as a national society, and there are few who would venture to challenge its right to be considered such. As a matter of fact the society is nearly half a century old, but it was only in January, 1884, that it assumed the name and title "National." Like many other great undertakings, it had a small and unpretentious beginning. Nearly all the early members have long since passed away, leaving a new, but quite as enthusiastic and industrious, set of men to continue the work which had so ably been begun.

Just previous to the date above mentioned, the officers of what was then known as the Borough of Hackney Chrysanthemum Society, finding that the culture of their favorite plant had rapidly increased in England, and that a love for the flower prevailed to a greater extent than had previously been the case, and believing that there was ample room for a more useful and larger sphere of operations, decided to abandon their local name and necessarily restricted field of labor, and by the adoption of a more extensive programme, develop into a society of a thoroughly national character. At that time there were many important Chrysanthemum societies all over the kingdom, some of which were holding exhibitions of a high standard of excellence, and those persons who advocated the change based their arguments upon the fact that the Boro' of Hackney society was the oldest of its kind, and that many eminent growers in all parts of the country, who would naturally stand aloof from joining a local society no matter what degree of fame it might acquire, would hasten to join a national concern. It was further argued that the time was ripe for such a society; disputes were constantly arising about the classification and nomenclature, and these could only be decided by the various opinions of the different judges at the shows where such questions arose, or as sometimes was the case, by an appeal to one of the organs of the horticultural press. Such decisions as these were of course not always accepted with unanimity, and the advocates of a national organization, fearful that some similar body would take the initiative, urged the Boro' of Hackney society to lose no time in changing its name and work. This is briefly how it is we have our present National Chrysanthemum Society, and the hopes and anticipations of those who brought about the change have been more fully realized than ever they could have imagined. In a very few years the standard of cultivation has been materially improved, the flower is more widely grown and admired than ever, the society's exhibitions are the delight of every beholder, thousands of visitors attending them instead of hundreds ; and everything tending to promote these and kindred subjects concerning the flower has been placed upon a solid footing and centralized. The National Chrysanthemum Society practically legislates for all other similar societies, and decides authoritatively many questions and disputes which are submitted to it from all quarters of the country.

Opinions differ regarding the exact date of the society's formation and first exhibition. The year 1846 is generally given as the date of both ; but if a show was actually held in that year, it cannot be regarded as the show of the society, but as a mere private effort of some of the founders, which probably resulted in the society being established the following year, because we find in contemporary horticultural literature that the reports of the early exhibitions date from the year 1847. Thus, in "Gossip for the Garden" for 1856, we find the show described as the tenth annual one, whereas it would have been the eleventh had the society begun in 1846.

If chronological differences abound, it is certainly not so with regard to the actual origin and founders' names, for one who has been familiar with the old north London growers says: "What a host of pleasant reminiscences is started by a glance at the names of some of our Chrysanthemum fathers! Perhaps the very first who are entitled to recognition are the founders of the original Stoke-Newington Chrysanthemum Society, Messrs. Holmes, Tant and James. How little they ever dreamed that their mutual resolve, while returning from the Vauxhall Dahlia Show of 1845, on the top of a 'bus, to hold a friendly competition at the old 'Rochester Castle,' in the following November (the loser to pay for a steak supper), would have resulted in such an organization as the national society of to-day." Yet so it was, and since those words were written the society has doubled both financially and numerically.

The late Mr. Shirley Hibberd has, in his own inimitable way, given an excellent word picture of the early days of this society, which may be most appropriately reproduced here: "Let us go back to the beginning in order to claim for this rural suburb of Stoke-Newington whatever renown it should have as the home of the first Chrysanthemum society. Picture, if you can, one of our old-fashioned wayside hostelries and call it the 'Rochester Castle.' Go back five and twenty years,* and picture the low-roofed parlors wherein every evening a number of the better class of tradesmen and small gentlemen of the village envelop themselves and each other in clouds of tobacco smoke, and while stirring their toddy discussed the politics of the day and the latest scandal of the district and the personal predilections of the most prominent members of the 'parlor.' There you shall see a big handsome man of generous rosy

* This was written in 1871.

face, and the complexion and expression of a true Anglo; or, if not that, at least as fine a typical Englishman as a searcher after ethnological types could desire. That is Robert James, the landlord of the 'Rochester,' a first-rate host, an enthusiastic and able florist; a man of broad sympathies and healthy tastes. The Chrysanthemum has become a pet of his, and he has formed a collection of some five and twenty sorts. The talk of the parlor turns upon horticulture, quite according to custom, and an exhibition of Chrysanthemums is determined on, and Robert James takes the lead as treasurer and advocate; and, of all the workers in the movement, best of all lays claim by his activities to be forever after known as the Father of the first Chrysanthemum society."

Among the early members of the Stoke-Newington Florists' Society for the Cultivation and Exhibition of the Chrysanthemum, as it was rather lengthily called, the names of William Holmes, Sr., George Taylor, Edwin Merry, Edwin Sanderson, etc., stand out prominently as indefatigable workers in promoting its welfare and in contributing to its shows. At an early stage of its existence prizes for cut blooms besides pot plants were instituted, although in those days there was no absolute standard set up, and it was not until the society had passed well out of its infancy that the immortal fathers of the Chrysanthemum definitely settled upon the incurved type of flower as emblematical of all that was perfect and sublime in Chrysanthemum beauty, and set that form up as the standard for seedling raisers to work up to. A perfect globe, with regularly disposed florets, rounded at the tips, without notch or blemish—this was the inexorable standard until the weird, fantastic Japanese varieties appeared, to set all preconceived canons of good taste at defiance. The old-school florist never could bring his mind to like the more modern form which has done so much to popularize the famous autumn flower, and never will. Deep down in his heart there lurks a strong feeling of positive revulsion against the "ragged jacks" which have pushed his favorites aside; and if a florist can hate a flower, the Chrysanthemum fancier of thirty or forty years ago has a large and abiding measure of that improper feeling for the popular "Jap."

Big money prizes, huge silver cups and challenge vases, gold medals, and similar sordid inducements did not form the motive power of the ancients. Apart from the shows, the Stoke-Newington Society held monthly meetings on the mutual improvement principle. Those who had discovered some important secret in the art of cultivation made the good news known to the others. Thus we find early in 1851 the genial Robert James posing as a lecturer, his subject being the "Pot Culture of the Chrysanthemum," which attracted some outside attention, as it was reproduced shortly afterward in "The Florist" and also in "The Scottish Gardener." Mr. William Holmes, Sr., was also a literary worker. George Taylor, whose son is still an able and valued worker in the society, discoursed upon the art of growing the autumn queen, and this he was subsequently induced to publish in separate form, thereby establishing his right to be considered the author of the first independent treatise on the Chrysanthemum published in England, which is now so scarce that hardly any of the present generation can claim to have seen it. Edwin Sanderson, for over thirty years the president, who only last year joined the great majority, also figures as a zealous literary worker, besides being, as were all his colleagues, a first-class practical exponent of the art of growing prize blooms.

It cannot be wondered at that the flower began to be talked about and freely grown, nor that it was speedily improved in size, form and color, for as time went on prizes of considerable value were offered for competition, and new raisers were not slow to take up the work of seedling production. As a matter of some public interest, the Stoke-Newington people appointed a committee, consisting of Messrs. Callahan, Croxford, Holmes, James, Merry, Taylor and Sanderson, to select the best varieties then in cultivation, and it is curious now to note the names of the flowers then considered the most worthy. Many of them have, of course, long since disappeared from our collections; there are still a few which remain and, after forty years or more have elapsed, may yet be found in the hands of *fin de siecle* exhibitors. The flowers selected by the committee were as follows: Annie Salter, Beauty, Campestroni, Cloth of Gold, Defiance, Duke, Dupont de l'Eure, Gem, Golden Clustered Yellow, Goliath, Imperial, King, Lucidum, Mdme. Chauviere, Pilot, Princesse Marie, Queen of England, Two Colored Incurved, Vesta, Worden.

The Stoke-Newington Chrysanthemum Show had now become a well recognized annual institution, and its work appears to have been regularly chronicled in the columns of the gardening press of the period. Owing to the yearly displays at the Temple, the cultivation of Chrysanthemums had spread very rapidly, and numerous other societies began to spring up, not only in the metropolis, but in other parts of the country. When the society had reached the tenth year of its existence, prize money to the extent of $350.00 was disbursed, and the annual dinner was attended by ninety-eight exhibitors and friends, and the reporter adds with approval, a more successful meeting was never before held.

From that time forward the society increased in members and in prosperity, excepting perhaps for a brief period when there was a split and the society became two, an arrangement which happily did not last long, and finally resulted in an amalgamation of the divided forces. The annual shows continued to be held in the neighborhood of Stoke-Newington, and under the able presidency of Mr. Ed. Sanderson the society continued to maintain its high position in the Chrysanthemum world, and the northern suburb became a kind of floral Mecca to which enthusiastic and zealous devotees of the goddess "Mum" used annually to make their pilgrimage, to worship at the shrine of the golden flower, meeting with old friends, discussing the merits of the show, and expatiating eloquently upon the beauty of the season's novelties. For a little more than a quarter of a century these men, simple in their tastes and habits, and unambitious for the future, were unconsciously

LATEST FAD.

REDUCED ONE-FOURTH.

laying the foundations of one of the greatest societies ever established in the United Kingdom. The names of them all will long remain blessed in the annals of their favorite flower, and it has become a point of honor with those who now continue to walk in their footsteps to try to prove worthy of the very substantial legacy of responsibility that has been bequeathed to them.

In 1874 signs of expansion began to be manifest, and the show for that year was moved to the town hall, Hackney, and in the following year the society became known by the name of the Borough of Hackney Chrysanthemum Society. Even at that time the schedule and prize list was a very unimposing looking document, consisting as it did of a four page leaflet, with prizes in twenty-six classes, the greatest prize being a sum equal to $15 for plants in pots. Mr. William Holmes, Jr., succeeded to the secretaryship in 1877, and the show was removed to the Royal Aquarium, Westminster, where it has continued to be held ever since with increasing success. The schedule for 1879 was double the size of its predecessors, and the officials for that year were: President, E. Sanderson; vice-president, R. Ballantine; treasurer, J. Harling; and hon. secretary, W. Holmes; all of whom occupied the same position five years later, when the conversion into the National Chrysanthemum Society took place. The total of the year's income was under $700, the membership 68 persons in all, and the society, although very much improved, was yet to feel the benefit of the changes then made.

The new secretary, by an enlightened and judicious policy, in which he was ably seconded by his brother officers, threw into the work all the energy and zeal that a man could possibly bestow, and after he had been a few years in office the Aquarium show became one of the sights of London, the income doubled, a very large accession of members had been made, and in spite of some little opposition the officials determined to throw aside the local character of the society, and by opening up a wider field of operations, turn it into a national society which should command the respect and support of growers all over the kingdom. In 1884 the change was made, and from that time till now those who were the strongest advocates of a national Chrysanthemum society have never had to regret the course they took. The roll of members went up by leaps and bounds. Almost every grower of repute joined sooner or later, and even in foreign countries many eminent lovers of the Chrysanthemum have expressed their sympathy with the work of the society by becoming members. At an early stage of its national existence, the society appointed a floral committee to receive and adjudicate upon new varieties, granting certificates of merit to deserving seedlings. A medal struck in bronze, in silver, in silver gilt, and in gold, is also awarded to exhibitors. An official catalogue of varieties, which has passed through four editions, exclusive of supplements, has been published and accepted as authoritative in almost every place where Chrysanthemums are grown. Additional exhibitions of early flowering and of late flowering varieties have been held yearly since 1886. Two exhibitions in the provinces, and half a dozen conferences on various matters closely connected with Chrysanthemums, have been held, besides a very important gathering called the "Centenary Festival," organized to celebrate the hundredth anniversary of the introduction of the flower into England; and what is more surprising than all, is the large measure of success that has been meted out to the affiliation scheme. Upwards of one hundred horticultural or Chrysanthemum societies are affiliated to the National Chrysanthemum Society, many of them in remote quarters of the country, and a number being situated in Australia, Tasmania and New Zealand.

Much of the detail work is relegated to sub-committees, but the officers and general committee are the governing body. A point that will probably strike an American reader as somewhat curious is that out of all the officers, not one, save the secretary, is in any way connected with the nursery trade or any branch of it. They are purely and simply Chrysanthemum amateurs, and it is in a great measure to that class of cultivators that the National Chrysanthemum Society owes much of its greatness to-day. The general committee, which consists of thirty-six elected members, is also remarkable in its composition, there being only eight out of that number who are in any way directly connected with the trade, the others being either gardeners or *bona fide* amateurs. These facts are mentioned to show American readers the power of the amateur element in advancing floriculture in this country, and it is noteworthy that in other societies, which can claim the greatest success, a similar experience must also be recorded.

In 1889 the society was reconstructed, and the rules amended and codified. Lord Brooke was appointed president, but has since been succeeded by an enthusiastic admirer of the Chrysanthemum in the person of Sir Edwin Saunders, F. R. C. S., etc. The other members of the executive are: Treasurer, I. R. Starling, Esq.; chairman of committees, R. Ballantine, Esq.; vice-chairman of committees, E. C. Jukes, Esq.; Chairman of floral committee, W. H. Fowler, Esq.; secretary, Mr. Richard Dean; foreign secretary, Mr. C. Harman Payne; all of whom have been connected with the society since its foundation on a national basis

As the society stands to-day it has among its patrons some of the highest nobility of the land. It has revenue equivalent to $5,000 per annum, nearly half of which is distributed in prize money at its exhibitions. Its roll of membership amounts to about 600 persons, including all the most eminent specialists and authorities on the Chrysanthemum in England, America, Belgium, France, etc. As an indication of its far-spreading influence, it need only be said in conclusion that the society has in addition to these, correspondents in every country where Chrysanthemums are grown, even in China and Japan, and that at the Antipodes, where much interest is now being taken in this flower, growers have been found to send over some of their productions to London frozen in blocks of ice in order to obtain an opinion of their respective merits from the general committee of the society.

If there is one thing that characterizes the proceedings of

OUTDOOR CULTURE.

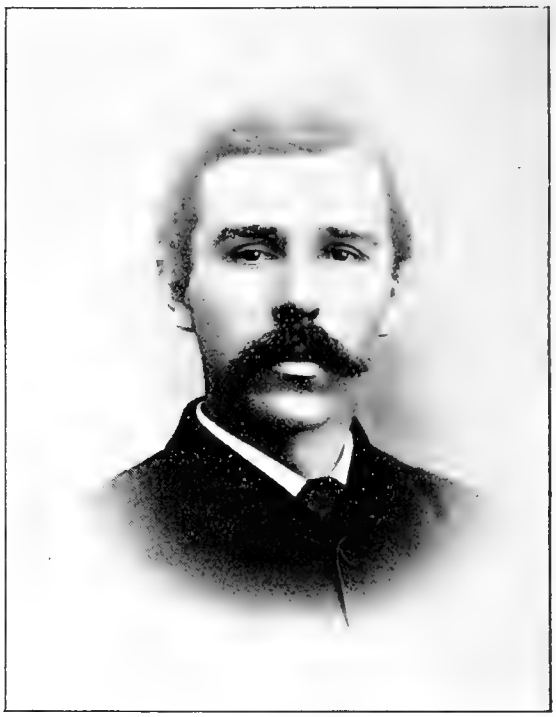
WITH many gardeners, both amateur and professional, it is a problem of no small magnitude to find sufficient space under glass for all the plants they feel compelled to cultivate. The Chrysanthemum—formerly considered a fairly hardy plant—has of late years been added to the number which are thought to require greenhouse accommodation all the year round. While this may be partially true in the case of exhibition specimens, where the plants demand the greatest care and protection from destructive storms and insects, or in the cultivation of some few varieties which are known to be of weak constitution and unable to withstand any considerable fluctuations of temperature, it is by no means essential to the production of good plants for the ordinary purposes of decoration. Late in the season, when the weather outdoors grows cold, the plants of course must have protection; but where there are graperies or other fruit houses connected with the garden, as are the circumstances here and in many other places, this can be easily and efficiently provided. Most of our greenhouses are filled with the choicest kinds of exotics throughout the year, and consequently our Chrysanthemums are grown outdoors and removed to the graperies on the approach of cold weather, when the vines have ripened their growth and generally completed their activity for the season. As this has been the practice here for several years, giving complete satisfaction, it may be well to furnish a closer view of the details of culture and management.

The cuttings—selecting clean and healthy, short-jointed material—are taken about the latter end of February, planted singly in two-inch pots, using a somewhat sandy compost, and placed in a cool propagating box, the temperature of which averages about fifty degrees. Here they remain, with the required attention to watering and shading, until rooted, when they are removed to a bench near the glass. Having filled the pots tolerably full of roots, the plants are potted on into others two inches larger, this time employing a compost of loam and well-rotted cow manure, three parts of the loam to one of manure, adding also a little leaf mold and sand. When fairly established in the new soil, they are pinched for the first time. Careful watering, syringing morning and evening of bright days, and plenty of ventilation in open weather fully covers their requirements until they are again ready for larger pots. Six inch pots are now used, and the soil should be heavier than that employed for the previous potting. Providing the loam is of a turfy, fibrous character, the leaf mold and sand should be totally discarded from the compost, otherwise the sand may be retained. The plants should now be allowed plenty of room, and pinching must be given careful attention. I find it a very essential point to have all the necessary pinching completed not later than the first of June, and in this operation care should be taken not to pinch too severely, merely removing the extreme point of each shoot to be stopped, and always allow the plants to regain their full vigor before pinching a second time, as otherwise the growth is inclined to be weakly. The green and black aphides are the only insects likely to attack them at this period, and these are easily got rid of by fumigation with tobacco on two or three successive evenings. Should caterpillars of any kind appear, they must be picked off by hand and destroyed without delay. About the first of June—a week or so later, if they have been pinched so late as the first of the month—the plants will be ready for their final shift into ten-inch or fourteen-inch pots, the latter size preferred for such free-growing kinds as Lilian B. Bird, Snowstorm, Kioto, Good Gracious, etc., using this time a strong, rich compost, three parts loam to one of cow manure and a sprinkling of pure ground bone and pulverized sheep manure. A little soot is also a valuable addition, for while imparting to the foliage a rich green color, it at the same time helps to keep worms out of the pots. After potting, the plants may be placed out of doors in a good sheltered position, plunging the pots to the rim in the earth, and arranging them about three feet apart in rows. A piece of board, tile or slate should be placed underneath the pots to prevent the roots from becoming established in the surrounding soil.

Watering must now be given careful attention. And it is not sufficient to merely water the soil in the pots, but if possible, the hose should be used to sprinkle the surrounding ground every evening, and at the same time to spray the plants overhead. This moistening process, especially in dry weather, is very essential to success. Pinching should be discontinued when the plants are removed to outside quarters, and as a further guard against the roots penetrating the soil in which the plants are plunged, it would be well to turn the pots around in their place about once a week. Staking and tying should receive regular attention, and a sharp watch must now be kept on insects. The squash bug is the first to make the attack, and then we have grasshoppers and caterpillars, followed later in the season by a brown fly about the size and shape of the squash bug. This brown fly is very injurious, and appears to devour the heart of the shoots, stopping their growth altogether. The best method of getting rid of the foregoing pests is by picking them off.

Mulching with pure cow manure, about the second week of July, is exceedingly beneficial. It serves three purposes; first, as a feeder; secondly, it prevents evaporation, so that the roots require less water; and it is of additional utility in preserving the roots in a cool state. When the mulching has become exhausted, liquid manure may be applied freely. That prepared from sheep manure is preferable; but if such can not be had readily, cow manure will serve the same purpose. In order to secure blooms of good quality, it is necessary to disbud, and if possible the early buds, those that appear in July and August, should be preserved. Should any of these be deformed, however, the next earliest may be selected, choosing the largest and

EDWIN LONSDALE.



ARTHUR H. FEWKES.

W. A. MANDA.

T. D. HATFIELD

SOME AMERICAN PIONEERS.

See "Men of Note."

best of the several which appear on each shoot, and removing all the other weaker ones. The plants may be placed under cover about the middle of September, if space can be spared in a cool greenhouse at that time, and in any case this work should not be deferred beyond the latter end of the month.

One other thing has been strikingly noticeable in our plants during the past three years. They are grown in a frame-yard which is enclosed on one side by a picket fence running east and west, and I find that the two rows of plants plunged on the north side of this fence are much superior to the others grown on the south side. Those two lines have partial shade for about three hours mid-day, and while I am not prepared to advocate any great amount of shade for Chrysanthemums, I believe there is such a thing as too much sun for plants grown in pots. The wood of plants fully exposed becomes hard and over-ripened, the growth stunted, and hence incapable of producing fine flowers. It is probable, of course, that planted-out stock cannot have an over-supply of sunshine, but on this question I am not in a position to offer an opinion, as I have had little or no experience in that direction. And for similar reasons I am indisposed to urge the superiority of our method of culture as against the practices of other growers. But considering our circumstances, we have been very successful, and these hints may be useful to others similarly placed. We grow about two hundred specimens every year, and more than half of them have been better than the average. Most of the vigorous varieties can be successfully grown in this way, but some of the weaker ones, such as Mrs. Alpheus Hardy, Dr. Mandeville, Peter Kay and others, require greater care.

—James Scott.

Syracuse N. Y.

THE AMERICAN SOCIETY.

THE Chrysanthemum Society of America was organized in Buffalo, N. Y., at the regular annual convention of the Society of American Florists, August 22, 1889. It was started by a small band of enthusiasts, of whom John Thorpe was the recognized leader. When called upon to make a report on the matter, Mr. Thorpe responded: "In view of the Chrysanthemum being of so much importance, I am sorry to say that, as yet, we have not done anything toward the establishment of a national Chrysanthemum society. I want to ask all the members of this association who are interested in the Chrysanthemum (and I know that all of them are interested in it), to meet here to-morrow morning, at nine o'clock, so that we can formulate a plan upon which to begin action immediately after the session of to-morrow morning." These remarks were delivered by Mr. Thorpe before the Society of American Florists, August 20th, and accordingly the Chrysanthemum Society was established August 22d. The following constituted the first board of officers: John Thorpe, Pearl River, N. Y., president; Wm. K. Harris, Philadelphia, Pa, vice-president; John Lane, Chicago, Ill., treasurer; Edwin Lonsdale, Philadelphia, Pa., secretary. These men continued in office up to and during 1892, when the following appointments were made: Wm. K. Harris, president; E. G. Hill, Richmond, Ind., vice-president; Myron A. Hunt, Terre Haute, Ind., treasurer; Edwin Lonsdale, secretary. In 1893, the officers elected were: Elijah A. Wood, West Newton, Mass., president; E. G. Hill, vice-president; M. A. Hunt, treasurer; Elmer D. Smith, Adrian, Mich., secretary.

The same board, with the exception of the treasurer, was again appointed at Atlantic City, N. J., in 1894. Mr. Hunt having died April 23d, of that year, John N. May, of Summit, N. J., was elected in his place. At the meeting held in Toronto, Can., August, 1891, it was decided to prepare a classified list of varieties, based on the American ideas of form, utility, etc., and Elijah A. Wood was entrusted with the work. In this Mr. Wood called to his assistance his friend and neighbor Mr. Arthur H. Fewkes, and the result of their united efforts was the excellent report presented at the meeting held in Washington, D.C., August, 1892. This report has been printed, making a pamphlet of some thirty seven pages, and constitutes the first publication of the American society. A committee appointed in 1892 to prepare constitution and by-laws, presented same at the meeting held in St. Louis, Mo., August 9, 1893, when they were adopted. The most important work done by the society up to the present time has been the registration of new names, thereby preventing duplication and the increase of synonyms. The vast number of novel varieties now put upon the market annually by the dealers renders registration an imperative necessity, and the incidental labor which falls upon the secretary would be materially lessened if all disseminators of new sorts would kindly send to him the names (carefully and correctly written) and descriptions of their novelties at the earliest possible date.

A promising departure in the procedure of the society was made last year in the appointment of local committees to examine and report on all new varieties submitted to them. There were five of these committees, one each in Boston, New York, Philadelphia, Cincinnati and Chicago. This movement will undoubtedly need extension, and perhaps it should be amended so as to empower the committees to award suitable certificates to those exhibiting new varieties of satisfactory merit. It would also be well for the society to award one medal for the best novelty of each season, the prize to be given through some prominent society responsible for a regular Chrysanthemum exhibition, and not to be competed for in the same state two years in

succession. All who are interested in Chrysanthemums should join this society, and help the good work along. The fees are nominal, and the unity of action consequent upon a better concentration of forces may be made mutually serviceable. In the few years of its existence, considering the amount of ground to be covered, the Chrysanthemum Society of America has performed a work which for utility and thoroughness will compare favorably with that of the early years of any similar body. Where the workers are so much scattered and isolated, it is a matter of extreme difficulty to get them into line. The society is as yet far from being as perfect as it ought to be, and none are better aware of this fact than the men now at the helm. Mistakes have been and are still unavoidable; and while there are none of a serious character with which the society can be justly charged, those having the shadow of a foundation might have been avoided by the prompt action of the complaining parties. But this tardiness of the growers, amateur, professional and commercial, to co-operate with the society in its work of regulating Chrysanthemum matters is the one feature which the officers have been and will ever remain unable to overcome. The hearty and spontaneous assistance of all the growers is fundamentally essential to healthy progress in any movement of this nature. The growers can assist very materially in the development of the society in many ways, and in none more forcibly than by a speedy recognition of its regulations. It is perhaps true that in local instances the arrangements have not been always satisfactory, but in this regard it should be remembered that all the growers demand attention, and that it would be quite unfair to disregard several for the accommodation of one individual. —**M. B.**

SOME NEGLECTED GROUPS.

THE fashion which in recent years has prevailed for large-flowered Chrysanthemums, has ousted from public favor many not less beautiful kinds that used to be popular, and indeed were the only kinds known to those who cultivated Chrysanthemums in their outdoor gardens. As I write, there is in an adjacent garden a beautiful bush of a pompon variety, bright yellow in color, which has flowered in the same and other gardens for many years every autumn, brightening up what would otherwise be a dreary place at this season. The roots of these plants are left to take care of themselves in the open border all winter, and this is possible on account of their hardiness as compared with the more tender, large-flowering Japanese Chrysanthemums. It is doubtful if one could now get a set of the old-fashioned Artemisias, as these plants were known years ago; but there are many sorts in cultivation in Britain, which are there well thought of and cared for, and if the demand were increased, there would be no lack of dealers who would be ready to meet it with a supply. The name pompon in this connection applies to the sorts that have small, round, button-like blooms in clusters. There are many colors, such as white, yellow, pink and bronzy-red, and sometimes the flowers are quilled in the center like the Chinese Aster, but more often they are merely miniatures of the larger reflexed varieties.

There is another class known as Anemone-flowered Chrysanthemums, and among these are some that are large, of beautiful colors, and graceful in shape, especially those called Japanese Anemones, or the kinds that have the outer row of florets reflexed and parallel with the stem, while the center is built high with quilled florets. This class was very popular a few years ago and many additions were then made to it, but lately nothing has been heard of them owing to the craze for large or mammoth blooms, and the Anemones do not grow to the size or depth of the incurved and Japanese varieties. They have, however, a beauty all their own, and it is not to be despised. One we have now (November) in bloom, called American Eagle, is a large white and purple flower, very beautiful and nearly six inches across. Another nearly as large, but of pink color, is Judge Hoitt, while Thorpe Junior is a good yellow one. All of these are Anemones, and easily obtained from any of the dealers in Chrysanthemums. It is possible to grow the Anemone-flowered varieties to a larger than ordinary size by disbudding and treatment similar to that required to grow large flowers of the other sorts, but the same treatment will not make a pompon variety develop large blooms. These are essentially clustered kinds, and must be grown without disbudding to get the best results, hence their adaptability to outdoor culture.

Another class is known as reflexed Chrysanthemums, and includes those whose florets are flat and the reverse of incurved, as in the group known as Chinese—and in passing it may be well to remark that the kinds known as Japanese have no especial right to the title, inasmuch as these and the so called Chinese have one common origin in the species C. Sinense, of which all cultivated Chrysanthemums are mere garden forms. But to return to the reflexed kinds, a good and well known example of which is found in the variety Cullingfordii, which is more commonly grown to-day than any other, a circumstance largely due to its unique color, and in this regard it would be interesting to know how so distinct a break was obtained, whether direct from Japan, by sport, or from seed.* The many attempts to get the same color in other and larger flowers have hitherto yielded but little returns, save perhaps in the kind raised by Thorpe and known as G. W. Childs. This has much of the Cullingfordii blood in it, but is liable to burn from too

*The variety Cullingfordii was raised in London, England, by Mr. W. H. Cullingford in 1882, from seed procured from a French dealer. Nothing is known of its parentage, but the plant was grown on at Mr. Cullingford's country residence, Seaford, Sussex, and was first flowered out of doors with the simple protection of a glass cover.—ED.

much exposure to the sun when the flowers are fully open. Viviand Morel is also classed as a reflexed variety by the Chrysanthemum Society of America, and followed in this by the Massachusetts Horticultural Society, it is difficult to understand the arrangement, for a more thoroughly typical Japanese variety than this charming flower cannot well be imagined. Another old variety belonging to this class is Progne, a rich amaranth-colored and highly fragrant Chrysanthemum that used to be often seen in gardens, as also were Christine, white, and Golden Christine, yellow. These are most suitable for pot culture, and need protection in autumn just as do the better known kinds; but to those who love flowers for their own sake, and not for the enormities so often seen, these lesser known varieties are a source of pleasure, and give good results with far less care than is necessary to develop the large flowers even on the kinds that are known to produce them.

The single-flowered Chrysanthemums are really reversions to the original type, and all batches of seedlings give a large proportion of plants that produce single flowers. This is easily understood, for the tendency of all artificially improved garden plants is to revert to their natural form, and it is only by the exercise of the utmost care and vigilance in crossing that the artificial standard can be maintained. But many of these reversions have in times past taken the fancy of the raisers, and have been saved from the rubbish heap on this account. They have no commercial value in these days, though there is a kind called Daisy that has been often exhibited, and on account of its simple beauty elicited admiration from all who saw it. This variety resembles a large-flowered Marguerite, or French Daisy, more than the conventional Chrysanthemum, and is really well worth growing by those who love uncommon things. Chrysanthemum seed of good germinating power is now easily obtained from any of the large dealers, and the plants are as readily propagated from seeds as are the common Chinese Asters. There is a good deal of pleasure in watching the development of the flowers of seedlings in autumn. Sometimes a few really good varieties, worthy of perpetuation, will be found among them, and in any case the flowers are interesting and beautiful, even though the majority of them prove to be single.

—**E. O. Orpet.**

South Lancaster, Mass.

SEEDS AND SEEDLINGS.

THE production of improved Chrysanthemums is at the present time receiving more than ordinary attention, not only in advancement of the art of producing fine blooms, but also in exercising keen judgment in the selection of varieties to produce the seeds. It is some time since the artificial cross-fertilization of Chrysanthemums was first advocated; but there were many who declined to accept this new theory, holding that Nature's own way, by wind and insect agency, could not be improved upon. I think hand pollenized seeds are to-day preferred to those naturally produced. It certainly seems rational to hope for greater achievement from seedlings of selected parentage, than from those which the wind (without intent) or the insect (without motive, further than its own sustenance) have haphazardly united, good, bad and indifferent.

Late struck cuttings grown on in four-inch pots are the most suitable for the seed bearing plants, and should be placed by themselves in a dry, light house as soon as they show color. When the flower is two-thirds developed, take a pair of scissors and cut the florets off close to the styles (which are located at the base of the florets), but be careful not to cut or injure the styles in any way. In from three to ten days the styles will elongate and open at the top so as to expose the stigma or upper surface, which is the part that is to receive the pollen, and is ready to be operated upon when in this condition. If varieties are selected which have many disk florets, or, as commonly termed, have a center or eye, cut them out before they develop pollen, and thus prevent self-fertilization. Pollen may be taken from blooms cut and stored in water for the purpose, or from those on the plants, on bright sunny days by a camel's hair pencil, and applied to the stigma of any desired variety. By having each plant labelled, it is very simple to keep a record of the work, and it often affords pleasure to know the pedigree of a fine seedling. For this take the smallest size of shipping tag, and first write the name of the seed plant and then that of the pollen parent, thus:

CULLINGFORDII
X
GEO. W. CHILDS,

and tie it to the plant. In from four to six weeks the seeds will be ripe, and may be sown at any time in light soil, and placed in a temperature of 60 to 65 degrees. The young seedlings are quite apt to damp off, and should be watered with care and given as much air as possible until they have the third or fourth pair of leaves, when they may be considered past danger. From this time on they will need the same attention as other varieties, and may be grown in pots, boxes, or on the bench, at the option of the grower.

In the course of our improvements from time to time we have grown more and more exacting, and at present a seedling must present many good qualities to be commended; and as our varieties, with a few exceptions, are more or less faulty, the hybridizer experiences some difficulty in making selections for seeding. I doubt if anyone has detected the laws of Nature governing the potency of varieties as parents, although we do know some have greater force than others, showing very markedly their peculiarities when used as either seed or pollen parents.

From our point of view, the massive blooms of these days are wonderful improvements, while Dame Nature considers us as impostors, our efforts greatly obstructing her law of reproducing by seed, and thus it is that there is such a tendency in seedlings to revert to the original single type of flower. Seedlings from two double flowers often produce flowers far inferior to either. This inclination to deteriorate or partake of remote antecedents again confronts us in our efforts to produce the desired colors. Seeds from two whites may produce white, pink, or yellow; so at the beginning we have no assurance of the result. An artist will take his palette and show you that a little yellow mixed with scarlet will intensify the scarlet, and in adding yellow little by little will produce all shades from vivid scarlet to orange. A certain amount of white upon red will give a beautiful shade of pink, as was brought about in the cross of Edwin Molyneux (crimson) pollenized by Mrs. Alpheus Hardy (white), producing Lady Playfair (pink); but more than likely this same operation would not produce the same result unless exactly the same conditions could be maintained. These variations of results may be due to the conditions of the plants treated, such as vigorous or weak, or the condition of the stigma at the time it received the pollen, or the condition of the pollen when applied. In crossing two colors we cannot arrive at definite conclusions until the flowers are before us, and such conditions will exist until we know more of the laws governing the potency of varieties. We may not make very marked headway in this direction for years to come, but if those interested will keep minute records of the results obtained for a number of years, they may be able to throw some light on the subject.

—**Elmer D. Smith.**

Adrian, Mich.

MEN OF NOTE.

ONE of the most pleasing and instructive forms of recreation within the reach of modern gardeners, is a perusal of the records of their predecessors in the various departments of horticulture and floriculture, as generously preserved in the professional journals and magazines. The annals of our favorite flower fairly teem with illustrious names, and in this country John Thorpe must be accorded a foremost place among her champions. The best years of his life have been spent in promoting the interests of floriculture, elevating it to a higher and purer standard. He was the prime mover in the formation of the Society of American Florists, and the president of that institution during the first two years of its existence. But notwithstanding this and many other brilliant services rendered floriculture in general, it is as an advocate of the Chrysanthemum that we see him at his best. Always ready with tongue and pen to tell of his beloved flower, he taught the press and learned societies to recognize her, and thus opened the way to the foundation of the Chrysanthemum Society of America. He was the author of the first work on the flower published in this country, "How to Grow Chrysanthemums," which appeared in 1886. John Thorpe is a native of England, having been born in 1842, and came to this country in 1874. He was for a time with the late firm of V. H. Hallock & Son, of Queens, N. Y., and later was engaged in business on his own account at Pearl River, N. Y. When the Columbian Exposition was got under way at Chicago, he was appointed chief of the floricultural department, and is now, with offices in Chicago, I understand, engaged in the business of landscape gardener. His brusque yet kindly features are perhaps more familiar to the florists and gardeners of the United States than those of any other horticulturist. See frontispiece.

EDWIN LONSDALE.

It will interest many of our European friends to learn that the man who now occupies the most influential position in American floricultural affairs, viz., the presidency of the Society of American Florists, is an old school-fellow of that eminent horticultural writer, Mr. Brian Wynne, the able editor of the "Gardening World." Mr. Lonsdale was also secretary of this organization in 1888, first president of the American Carnation Society, and first secretary of the Chrysanthemum Society of America, so that the crowning honor has been well earned. Mr. Lonsdale has always taken a leading part in all enterprises having for their object the welfare and advancement of American horticulture. He is perhaps best known as an authority on Carnations, but has done a vast amount of work in all other departments, including Palms, Orchids, Roses and Chrysanthemums. He was born in a small hamlet near Shrewsbury, Shropshire, England, but with his parents at an early age removed to Shenstone, near Lichfield, Staffordshire. After leaving school, he served some years in various Staffordshire gardens, including those of Manley Hall, and about 1865 moved to Hanover Lodge, Regents Park, London. Later he returned to Staffordshire, and was employed under Mr. Stephen Taplin (now of Detroit, Mich.), in the gardens of Enville Hall, where in a short time he gained a more thoroughly practical knowledge of the business than in all the previous years he had devoted to it. Coming to this country in 1869, he was employed by Mr. Thomas Meehan, proprietor of the Germantown nurseries, where for about two years he had charge of the greenhouse department. He then spent some time in California, and returning to Philadelphia, settled there to what has proved to be a profitable business in 1875.

ARTHUR H. FEWKES.

Not many miles from Boston's busy throng, in Newton, otherwise known as the Garden City—one of those exquisitely beautiful little residential towns for which the suburbs of the old Bay State capital are renowned—may be found the home and nursery grounds and greenhouses of Mr.

MISS M. M. JOHNSON.

NATURAL SIZE.

Fewkes. The proprietor is by nature a rather reserved man, but the visitor who is interested in Chrysanthemums, and competent to talk about them intelligently, can readily remove all shyness by turning the conversation to these flowers. They are his favorites, and with a knowledge of them which I have seldom seen equalled, he delights to point out to an appreciative companion their individual merits and demerits, meanwhile commenting entertainingly on their history. Mr. Fewkes is a native of the city in which he resides, and was born in 1856. His interest in Chrysanthemums dates back to some fourteen or fifteen years ago, when it was first awakened by seeing the plants of Dr. H. P. Walcott, E. W. Wood and Joseph Clark at the exhibitions of the Massachusetts Horticultural Society, and by reading in the "Gardeners' Magazine" excellent accounts of the European exhibitions and other matters bearing on Chrysanthemums. These plants now became the one great object of interest to him, and he soon brought together one of the most extensive collections of them in the country. He became associated with Dr. Walcott in the importation of new varieties, and in 1886, through Mr. John Fottler, of Boston, the Neesima collection fell into his hands. This lot of plants, numbering some thirty varieties, attracted widespread attention, as it included the famous Mrs. Alpheus Hardy. The story of that captivating variety has been more powerful than any other factor in arousing a general interest in Chrysanthemums during recent years. The collection also contained the popular Wm. H. Lincoln, but most of the other varieties have passed into oblivion.

W. A. MANDA.

The giant figure and earnest face of this wizard of horticulture are well known to all the more prominent gardening specialists of Europe and America. His name is familiar to amateur and professional growers of plants and flowers the world over; but there must still be many of the rank and file to whom his personal appearance is unknown, and such as these will gladly welcome his portrait, which, by the way, is a most excellent one. Mr. Manda is a native of Bohemia, where he first saw the light in 1862. His father was a forester, and thus our horticulturist of to-day was in a measure born to the profession. Indeed, from his earliest days he had a strong inclination to studies of plants and their cultivation, and in full sympathy with this he was, after completing his school education, sent to the gardens of the Grand Duke of Hessen-Cassel, at Harowitz, where he served three years. Having been employed for lengthened periods in prominent gardens, nurseries and seed houses of Vienna, Paris and London, he came to this country in 1883, and soon secured a situation as assistant superintendent of the Harvard botanic gardens, Cambridge, Mass., and on the resignation of Mr. William Falconer some months later, he was appointed superintendent. In 1888 he joined with Mr. James R. Pitcher in establishing the United States Nurseries at Short Hills, N. J., and this concern being changed to a stock company, he severed his connection with it, and commenced business on his own account at South Orange, N. J., about a year ago. Mr. Manda has raised innumerable new Chrysanthemums of the highest quality, and in purchasing the variety Mrs. Alpheus Hardy, gave the highest price that has ever been paid for one.

T. D. HATFIELD.

Undoubtedly intricate as an art, the culture of specimen plants of Chrysanthemums requires a large amount of patience and perseverance, and that Mr. Hatfield possesses these qualities, together with the necessary skill, is fully manifest from the superb examples of his work which may be seen at the annual exhibitions in Boston. The plants grown by him are without question the most perfect yet produced in this country. How he does it is told elsewhere in these pages. While many growers are certainly able to produce flowers of Mrs. Alpheus Hardy of the highest quality, Mr. Hatfield is perhaps the only one, at home or abroad, who can claim to be similarly successful in the development of specimen plants of that beautiful though capricious Chrysanthemum. He has exhibited some marvellous plants of this variety in New York and Boston, and equally good results have followed his treatment of other sorts reputedly weak or unmanageable. Exhibition plants were of very poor quality in the United States until he attempted their cultivation some five or six years ago; but since that time the standard of excellence has been greatly advanced, and Mr. Hatfield has always kept well in front of all competitors. He is a gardener by profession, and a native of Cottingham, a small village near Hull, Yorkshire, England. Having served some years in various gardens in the vicinity of Hull, he went to Kew, and remained in that establishment two years. He was afterward employed in prominent British gardens, and later became foreman of the herbaceous department of the Chad Valley Nurseries, Birmingham, whence he came to this country in 1884. After being employed three years in the capacity of grower by Messrs. Woolson & Co., of Passaic, N. J., he entered upon the duties of his present position as gardener to Mr. Walter Hunnewell, of Wellesley, Mass.

ELIJAH A. WOOD.

As president of the Chrysanthemum Society of America, Mr. Wood has brought the work of the institution into that state of activity which alone can make it useful to the community. For some time after its foundation, the society did not appear to prosper so well as its friends expected; but the placing in office of the latest president imparted a livelier pace to its proceedings, and the policy he has adopted seems to suit our growers better than any other. It would have been difficult under any circumstances to make a wiser selection. Mr. Wood is immensely popular, and his knowledge of Chrysanthemum matters in this country is of the most complete order. He is the great social personage of all floricultural gatherings in the United States. Small of stature, he is familiarly known as "Little Woodie;" but his brilliant wit and capacity for pointed criticism in floral affairs render him a giant intellectually. He sings delightfully, and his songs do much to make conventions, excursions, etc., enjoyable. Mr. Wood is a native of Newton, a few miles from Boston,

Mass He was born in 1859, and for many years was a close neighbor and intimate friend of such Chrysanthemum experts as Arthur H. Fewkes and Henry A. Gane. For a long time he devoted considerable attention to experiments with Chrysanthemums at his father's floral establishment in Newton, and he was the first grower to exhibit specimen blooms in New York in vases. This event may be said to have been the death knell of the exhibition boards and boxes formerly in use, and we should certainly feel thankful for the action which led to the complete suppression of such objectionable features. Mr. Wood recently entered the employ of the South Denver Floral Co., Denver, Colo., but the greater part of his previous life was spent on the old family homestead.

E. G. HILL.

Few of the florists of the United States can better lay claim to the respect of his fellows than E. G. Hill, of the well known firm of Messrs Hill & Co., Richmond, Ind. The worthy vice-president of the Chrysanthemum Society of America has been in the front of the battle for better floriculture all his life, and we have the best evidence of a warm appreciation of his efforts in the fact that he is an ex-president of the Society of American Florists, also of the American Carnation Society. Mr. Hill is a native of Rochdale, Lancashire, England, but came to this country when a mere child. His forefathers were horticulturists by profession, and thus as a boy he grew up in the business. Having served various prominent firms in the capacity of manager, he some years ago commenced business on his own account at Richmond, Ind., laying the foundations of the present prosperous concern. Mr. Hill makes specialties of Roses, Carnations, Pelargoniums, Begonias and Chrysanthemums. His collection of Pelargoniums is said to be very fine. In late years he has grown Chrysanthemums quite extensively, and has been very successful at the exhibitions. He has introduced many of our best modern varieties—Mrs. E. G. Hill, Challenge, Eugene Dailledouze, etc. Mr. Hill is not so much an originator of new sorts as a distributer of them ; but he has himself raised many first-class varieties, and he possesses that rare faculty of knowing a good thing when he sees it. This is a characteristic of the successful florist of the present day, and one that is as indispensable as the knowledge of essential procedure in the creation and cultivation of novelties. And Mr. Hill does know how to grow the flowers, as well as how to place them before the public to the best advantage, as all can testify who have seen his exhibits in New York and elsewhere.

JOHN N. MAY.

Somewhere about the year 1869, there came to this country a man who was destined to play a prominent part in our floricultural circles. This was John N. May, now our greatest authority on Roses and their cultivation. He was born in Middlesex, England, where his father was a gardener, and is the descendant of an old Yorkshire family that has been in the business of florists and nurserymen in that country for several generations. At the age of fourteen he was apprenticed to the late J. B. Whiting, of Dorking, Surrey, who was at that time well known as one of the best practical gardeners in England. After serving his time there, he spent some years in other large gardens, principally in the north of England. In these he was employed, respectively, as journeyman, foreman and head gardener, until he came to this country. Having been employed for a time in Canada and Vermont, he finally located in Madison, N. J., where he shortly took charge of the Rose growing establishment of the late E. V. Haughwout, with whom he remained until 1880, when he started in business for himself at Summit, N. J. Mr. May is a very busy man, attending personally to all the details of his extensive grounds and greenhouses, and he has often remarked to his friends that he has never been idle or out of employment a single day since he was fourteen years of age. And yet, he has always found time to take an active part in the proceedings of the principal horticultural and floricultural societies. Mr. May has always given largely of his time and space to Roses ; but of late years he has turned somewhat with the popular taste, and now also devotes much attention to Chrysanthemums. He has raised many excellent new varieties, one of which, Olympus, is figured in this volume.

ELMER D. SMITH.

The man who has given to the world Niveus—the highest and most beautiful type of Chrysanthemum—is well entitled to a prominent place among our notable personages. This man is Elmer D. Smith, of the firm of Messrs. Nathan Smith & Son, of Adrian, Mich. Mr. Smith is quite a young man, as may be judged from his portrait among those of the officers of the American Society ; but he possesses a very extensive and diversified knowledge of Chrysanthemums, and he is also an indefatigable worker in their behalf. The Chrysanthemum Society of America owes much of its usefulness to his untiring zeal as secretary during the past two years. The paper on bench culture which he read before the American Florists in annual convention at St. Louis, Mo., 1893, is perhaps the most conscientious and thoroughly practical piece of work on Chrysanthemums which has yet appeared in this country. By going about the work in a thoroughly scientific manner, he has succeeded in originating many seedlings of sterling merit, and he has been no less careful in the selection of names for his productions. This matter of nomenclature is far too lightly regarded by the majority of growers, and the result is that while we have a large number of names which are not exactly synonyms, they are, from their close resemblance when hurriedly written, the next thing to being identical. And again, many names are large and unwieldly beyond necessity, and in their use take up more than a fair share of time and space. The system of short, one-word names, such as Juno, Mayflower, Sunset, etc., first generally adopted by Dr. H. P. Walcott, of Cambridge, Mass., some years ago, is perhaps the best that can be devised. It is looked upon as honoring individuals to bestow their names on varieties, but the custom is generally inconvenient, and the honor often questionable. —M. B.

AMERICAN VARIETIES IN EUROPE.

THERE is much to be done for the growers of American seedlings in Europe, but the competition is exceedingly close. The beautiful varieties of Calvat, of Crozy, and the English novelties, reach us during the month of December in time to make good plants, while the American novelties are not received until much later, so much so that we cannot cultivate them long enough to make exhibition plants of them. It was thus that I received last year new varieties from Mr. Spaulding during the month of June. I shall hardly be able to see even the color of the flowers. Another grower sent us rooted cuttings in a case that was hermetically sealed, and directed to Ghent via Hamburg and Anvers! There were among the number Challenge and Eugene Dailledouze, of which I have been able to save a few fragments. It is useless to tell you that I did not exhibit either one or the other, and thus an entire year was lost.

Something has to be done in this direction, and it must be done, since the American varieties are suitable above all others to our methods of culture. Cut flowers occupy only a very small part of our time; the demand is for beautiful specimens with large flowers, firm branches and beautiful foliage. American varieties are distinguished in these respects, but they should reach us earlier.

—O. de Meulenaere.

Ghent, Belgium.

NONE BETTER.

In sending a few notes on the behavior of American varieties in this country, I cannot do better than to first mention the magnificent Niveus, because I certainly regard it as the best sort that has come to the front in recent years on our side, and I am not far from the truth in adding that it is the finest all around kind yet raised. It is grand for any purpose. The bloom is large and deeply built, with florets of extra substance, gracefully formed and the purest of whites. Its foliage is ample and healthy, the stem strong enough to hold each bloom firmly, and under all modes of cultivation the flowers are double to the center. As a bush plant for the supply of cut blooms for market, I predict for this sort a great future here, as well as taking quite a leading position among exhibition flowers. I must not forget to mention that its easy culture will cause it to find a place in the collections of the merest novices in the cultivation of our autumn flower.

W. G. Newitt is a very fine white, but of a different type, especially in its growth; but I think when its cultural needs are better understood here, this sort will be highly valued. The Queen is still another type of white (sometimes tinted) of very fine size and form for exhibition purposes, but for general use I fancy it will not become popular. One remarkable fact may be noted here: The three American varieties here named gained the distinction of first class certificates of the National Chrysanthemum Society of England on one and the same day. Add to this the fact that the new Philadelphia would most certainly have secured the same honor had the blooms arrived in time,* and some idea is obtained as to the position of American sorts of the white color in this country. With regard to the last-named, judged from the flowers sent over, it appears to me to be one of the noblest of all Chrysanthemums. The incurved type of the Japanese is one that does not find such favor with us generally as on your side, but the florets build up in such a remarkably graceful form in this case as to satisfy the taste of everyone in the matter. This sort also appears to have a good strong constitution, and we have had the best evidence of the lasting qualities of the flowers, so that it is safe to say American raisers need not fear any rivals in the way of producing novelties if they continue to send us specimens of such handsome character.

There is still another most promising white in Mrs. J. Geo. Ils, which has hardly had time so far to establish itself here, although I saw one magnificent bloom from a late-struck plant. This was exhibited by an amateur grower, and from the extra points gained by it, he managed to win a first prize. The bloom measured about eight inches in diameter, and was full and solid. There is an apparent lack of finish to the florets at their tips, but this may right itself another year. Marie Louise should prove a good late white. It is strange that Ivory has never had a good trial here, although so popular with you. Miss Annie Hartshorn is still highly esteemed with us, notwithstanding that it has not figured so prominently as it did in 1893. That hot season seemed to suit it admirably, and it was grown in splendid form. L. Canning is capital as a late-flowering sort, the blooms grown in quantity on a plant; but it failed as an exhibition variety. When disbudded the blooms absolutely refuse to develop, and I only remember seeing one good large flower of it. Potter Palmer is a good white, although for some reason it has never become widely known here. I have had it from the first, and find it a most excellent grower, producing a good type of bloom. Such kinds as Niveus, however, will now seriously restrict its growth in popularity.

H. L. Sunderbruch, among yellows, is indeed a fine variety, but unhappily its constitution is not of the best. Magnificent blooms were exhibited last autumn by the two or three growers who possess it. The flower is so spreading and graceful, as well as large, that were it a better grower, it would run such varieties as Sunflower, M. Panckoucke and others pretty close for the premier position. Duchess of Wellington is an American sort, being one of the Pitcher & Manda seedlings purchased by Mr. H. J. Jones, which has done well. It is a very fine form of the loosely incurved type, and of a shade of yellow that is particularly striking. Challenge will be highly valued if by a long season's growth it produces blooms a trifle larger than we found them last year. It is grand in color. The form

*This variety received the highest honor at the disposal of the English society on the arrival of the blooms, namely, a silver gilt medal.—ED.

is perhaps a little too close, but it has one essential much prized on your side, namely, a stout stem, holding the flower well in position. This quality, as you well know, is not so highly appreciated here, because our methods of exhibiting cut flowers differ greatly from those that obtain in America. And as a case in point I may mention Sunflower, which is noted for its weak stem, and yet one of our leading exhibition blooms.

Eugene Dailledouze has not yet had a fair trial. The color is good. Major Bonnaffon is, I fear, too small. Master Bates Spaulding seems a likely sort to obtain honors. It is not a bright yellow, however, nor does it appear to have a constitution strong enough to suit the general cultivator. The Tribune is a very fine light yellow, but it was not seen so often or so good last season as one could wish. Perhaps the comparatively sunless year was against it. Mrs. R. J. Hamill is an American seedling with an English name. This is a tall grower, but it bears very handsome flowers of an incurved form. The color is light yellow. Sir Edwin T. Smith is another American sort, and a most beautiful one. The color is similar to that of Golden Gate, which I believe, was introduced from Japan, therefore America cannot claim it. And if I am informed aright, Golden Wedding is from the same source. Lord Brooke in bronzes is by far the best, and is seen everywhere. It grows splendidly, and is a certain bloomer. Col. W. B. Smith is first in its color and form. Last year good specimens were scarce, but in the season of 1893 it was magnificent at all the shows. In this variety America can claim one of the best half-dozen Chrysanthemums in cultivation.

George W. Childs will not grow large enough to be esteemed as a show bloom. In color it is grand, and the plant has other good qualities; but in these notes I am guided by the highest comparisons, and from this standpoint the deep crimson American sorts are not equal to those of other shades. Wm. Bolia looks like developing a fine amaranthine crimson bloom, and the habit of the plant is good. I consider this variety very fine. Eda Prass is extra good. When at its best, as I had it in 1893, this is one of the most desirable varieties we possess. The growth is perfect. Silver Cloud has a valuable shade of color, and I imagine we have not yet seen it in its best form. Mrs. T. Denne belongs to the incurved section of the Japanese, and is a good show bloom. Violet Rose was exhibited in good form last autumn, but it is not sufficiently reliable to become very popular.

Among the uncertain ones must be mentioned W. W. Coles, grand when at its best. This sort, however, appears to thrive most satisfactorily in the cooler parts of the country. Harry May, Beauty of Castlewood and Mrs. Charles Wheeler are also unstable. Good blooms of the two last are particularly handsome, but it requires the most skillful growers to bring them to perfection. They appear to have a strong dislike to the smoke of our large towns. Wm. Tricker is still considered very good. Mrs. E. G. Hill makes a fine show bloom, and is extremely useful for supplying cut flowers in quantity. Its flesh pink is a delightful shade. Puritan is good, but beaten by the American variety Mrs. W. H. Lees. The flowers of the latter are among the largest of all Chrysanthemums, but the plant is exceptionally tall in growth. The number of American incurved varieties that are of any assistance to the exhibitor here is exceedingly limited. C. B. Whitnall has been seen in good form, and J. Agate, which would easily pass for the Empress of India, is among the finest of whites.

The foregoing list contains all the best that come uppermost in my mind as I write. Under my care there are, I may say, hundreds of sorts from across the Atlantic, some of which will as time goes on force themselves to the front. At any rate, considering the short time that American growers have been engaged in the work of improving the Chrysanthemums, their productions will in my opinion compare most favorably with those from any other part of the globe. —**H. Shoesmith.**

London, England.

FUNGOUS DISEASES.

THERE are not many known species of fungi that prey destructively upon the cultivated Chrysanthemums. Apparently the first one to be recorded was Oidium Chrysanthemi Rabenh., the author treating of this fungus somewhat fully in Hedwegia, No. 5, 1853, pages 19–21, with illustrations. From this it is evident that the Oidium of the Chrysanthemum is the conidial form of one of the powdery mildews, and most likely Erysiphe cichoracearum D. C., which is a very common parasite upon various species of the family Compositæ, to which the Chrysanthemum belongs. Until the ascospores and their perithecia are met with on this host it will be well to retain Rabenhorst's name as one of convenience. The Oidium is a mildew frequently met with upon the Chrysanthemum, and is easily recognized by the white dust that it produces upon the foliage, suggesting that flour had fallen upon the leaves. Roses are frequently affected with a similar mildew, which was first named Oidium leucoconium Desm., but this was afterwards determined to be an early stage of Sphærotheca pannosa Wallr. The Oidium Tuckeri Berk. is the widely-known and destructive mildew of grapes in Europe. American vines are attacked by Uncinula Americana Howe, which has its first form of spore closely resembling the Oidium of Europe, and it is likely that the grape Oidium belongs to the Uncinula. The Chrysanthemum is no unusual instance of a plant being affected with a powdery mildew which fails to run through its whole cycle of spore forms.

MRS. WM. H. RAND.

REDUCED ONE-FOURTH.

The mildew of the Chrysanthemum is a fungus consisting of fine cobwebby filaments that are confined to the surface of the leaf and make their attachments to the host by means of minute disks or suckers. In this it is unlike the other Chrysanthemum fungous pests, which are deeply seated within the tissue of the host. It is more conspicuous

Fig. 1. *See* **Fungous Diseases.**

and less destructive than the other fungous enemies, and on account of its superficial nature should be easily removed. While it disfigures the plants to some extent, it does not seriously check their growth, and gardeners will therefore not trouble themselves if nothing more than the mildew strikes their plants.

Leaf Spot.—This fungous trouble, Septoria Chrysanthemi E. & D., first came under the writer's notice in the winter of 1891 and 1892 in connection with the study of the damping-off of Chrysanthemum cuttings, a note upon which was made in "Garden & Forest," Feb. 24, 1892, and later mentioned in the Report of the New Jersey Experiment Station for 1891. p. 292. The same fungus was found by Prof. Beech at the Geneva, N. Y., Experiment Station upon the foliage of greenhouse Chrysanthemums, and in the Eleventh Annual Report of the Station, pp. 557–60, he writes as follows: "The disease first appears in small brown spots which increase in size and number till the leaf tissue dies and the foliage drops off. In badly diseased plants nearly all the leaves wither and fall away." This Septoria was described by Cavara in 1892, in "Fungi Longobardiæ Exsiccati," No. 40, with figures. The illustration, Fig. 1, is made from a leaf in this collection, and Fig. 2 is a reproduction of the engraving that accompanies Cavara's specimens above mentioned. This shows a small portion of one side of an affected leaf in thin cross section. A spore-bearing cavity is seen imbedded in the leaf tissue, and in the center of the cavity (pycnidium) long slender bodies are to be seen, a few of them projecting from the mouth of the pycnidium. These slender bodies are the spores of the fungus, and are shown much more enlarged to the left in the engraving. These spores, made up of several cells placed end to end, are the "seeds" of the leaf blight, and by means of them the trouble spreads from plant to plant. As these spores ooze out of the cavity bearing them, they may be killed by the fungicide applied to the surface of the leaf. Badly blighted leaves may have their surface covered with these spores, and should therefore be removed from the plants and burned. It is also distributed in Brasi and Cavara's "Funghi Parasite d' Piante Cultivate," No. 221.

It is proper to remark here that the same name was given to a Septoria found upon a wild Chrysanthemum, the Ox-Eye Daisy, and published by the writer in the "Torrey Bulletin" for June, 1893, and No. 301 of Seymour and Earle's "Economic Fungi." After the arrival of Cavara's specimen in the two exsiccati above mentioned, and a careful comparison, the American Septoria upon Chrysanthemum Leucanthemum proves to be different. The pycnidia of the latter are one-half the diameter of those of the former and the spores are correspondingly smaller, being 14 30 millimeters long in the former and 55-60 millimeters in the latter. The species upon C. Leucanthemum may therefore well bear the name of Septoria mimima Hals.—S. Chrysanthemi Hals., not Cavara.

During the past year the Septoria upon the cultivated Chrysanthemums has become more or less common and will likely prove one of the troublesome species of fungi. Experiments with fungicides for this pest have been carried out at the Geneva Station, and it is recommended, after the removal of spotted leaves, to cover the remaining

Fig. 2. *See* **Fungous Diseases.**

foliage with Bordeaux mixture. "Five or six applications will usually be sufficient to keep the foliage covered—especially if the soap is used." The following is the formula for the Bordeaux mixture: "Dissolve in water two pounds of copper sulphate (blue stone), add whitewash made of one and a half pounds of fresh-slaked lime and dilute to twenty two gallons with water, then add enough soap to form a suds."

Recent Blight.—Within the past three years there has been considerable damage done to the cultivated Chrysanthemums by a blight not easily distinguished from the leaf blight (Septoria) above mentioned ; but one which under the microscope has its distinct structural characteristics. This fungus was discovered by Mr. J. Dearness, of London, Canada and described b Messrs. Ellis and Dearness as Cylindrosporium Chrysanthemi. It is a more rapid grower than the Septoria, and plants affected with it are often so stricken down as to be unable to make any blooms. Mr. Dearness, near the time of the discovery of this fungus, published a short paper in the "American Florist" for March 2, 1893, with three engravings, two of which are here reproduced. The following are quotations from the article : "It was first observed on a table of the Mrs. Senator Hearst variety, which had been sent from California in the spring. When the fungus appeared the plants were in vigorous growth ; they had been planted for cut bloom, and had developed stems three-eighths inch in diameter with corresponding foliage. On the plants affected in August and September the flower buds formed, but never opened ; on the plants attacked later, flower and foliage were arrested at the stage at which the yellowing and dark blotching of the leaves set in. * * * * The fungus can be easily recognized by the dark blotches, usually about a half to three-quarters inch in diameter. In these blotches are found the spore heaps or pits, and beyond them the leaf turns yellow ; not long afterward the whole leaf shrivels and is drawn downward to the stem."

Fig. 3. See Fungous Diseases.
BY PERMISSION OF "THE AMERICAN FLORIST."

The appearance of plants rendered worthless by the Cylindrosporium is shown in Fig. 3. The writer has during the past two years seen hundreds of plants that were even worse than the three here shown. Some varieties appear to be more susceptible, but experience is yet too limited to warrant the drawing of any conclusions concerning the relation of sorts or strains of Chrysanthemums to this destructive disease. In Fig. 4 is shown the appearance of a Chrysanthemum leaf that is affected with the Cylindrosporium. The large dark spots are located without order in the leaf, the remaining portions having lost the characteristic green of health and assumed a yellow color. The way in which the long spores are produced in the leaf and break out through the epidermis upon one side is indicated by Fig. 5. While the Septoria, Fig. 2, has a distinct wall to the spore cavity, there is none to the Cylindrosporium. This fungus is distributed in Vol. XXX., No. 2955, of Ellis's "North American Fungi."

New Leaf Spot.—The latest fungous enemy recorded upon the Chrysanthemum and the last to receive mention in this brief article is Phyllosticta Chrysanthemi E. & D., found by Mr. Dearness, at London, Canada, and published in the "Canadian Record of Science" for January, 1893. The specimens from which the description was made have not been seen by the writer. The leaf spots are orbicular, purplish-brown, with a distinct border. The same, or a very closely related fungus has been met with while examining cuttings of Chrysanthemums that were suffering from damping-off. Occasionally

the Septoria and Phyllosticta have been found upon the same blighted and worthless cuttings in the propagating bed.

REMEDIES.

Under this head much remains to be determined by actual experiments. From the nature of the fungous enemies, it is

Fig. 4. See Fungous Diseases.
BY PERMISSION OF "THE AMERICAN FLORIST."

quite evident that the ordinary fungicides will check the trouble. In the first place it goes without further saying that the stock from which cuttings are taken should be as healthy as possible. Here, as with Carnations, or in fact any plant, a diseased plant will yield weak cuttings. The conditions which surround the slips as they are set in the moist sand are favorable to the rapid growth of the fungus that was already in the cutting when removed from the parent plant. As a second precaution—and precautionary measures are often the most effective fungicides—the blighted portions of small plants should be looked for and removed before they have served their day as spore producers. There is certainly much to be done in the study of varieties and the rejection of those that are constitutionally weak or predisposed to fungous diseases. If, for example, the variety Golden Wedding is swept off year after year with the leaf blight, it is only proper that that sort be given up by growers who fail with it. One blighted variety may serve as a place of propagation for the germs that harm other sorts not otherwise affected.

It is doubtless true that much good could be done by using fungicides. Two only of these will be here considered, because they are the leading ones, namely, the Bordeaux mixture and the ammoniacal solution of carbonate of copper. The former is easily made in small quantities as follows: Dissolve six ounces of blue stone (sulphate of copper) in a quart of warm water. Slake six ounces of stone lime in a quart of water; strain the lime and water through a coarse cloth and pour the milk of lime into the vessel with the sulphate of copper; strain all through a sieve and add water to make four gallons. This fungicide should be applied once a week with a knapsack sprayer to all parts of the plants. When the plants are few, a smaller amount of the mixture can be made up and applied with a bellows vaporizer.

The second mixture named above is made by dissolving five ounces of carbonate of copper in three quarts of ammonia and adding fifty gallons of water. An aliquot part of the above may be taken if a smaller quantity is desired. Moisten the carbonate of copper with water in a bottle and add the required quantity of ammonia. The solution may be kept corked in the bottle indefinitely, and the amount desired poured into the water in the spraying vessel as needed for use. The latter mixture is not as effective as the Bordeaux, but does not leave a coating of lime upon the plants which would be objected to by some Chrysanthemum growers.

NEMATODES OR EEL-WORMS.

In the Report of the New Jersey Experiment Station for 1890, record is made of microscopic worms being frequently found in the foliage of Chrysanthemums. The plants thus infested failed to maintain vigor or produce blooms; the leaves become curled and brown. Professor Atkinson, to whom specimens were submitted, reported that the species, a genuine parasite, was undescribed, and proposed for it the name of Aphelenchus foliicolous, a nematode that seems to enjoy a wide range of hosts as it frequents the foliage of Coleus, Lantanas, Bouvardias, and other ornamental plants.

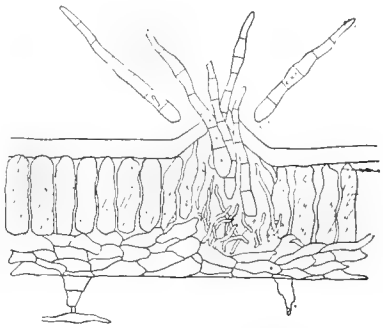


Fig. 5. See Fungous Diseases.
BY PERMISSION OF "THE AMERICAN FLORIST."

—Byron D. Halsted.

New Brunswick, N. J.

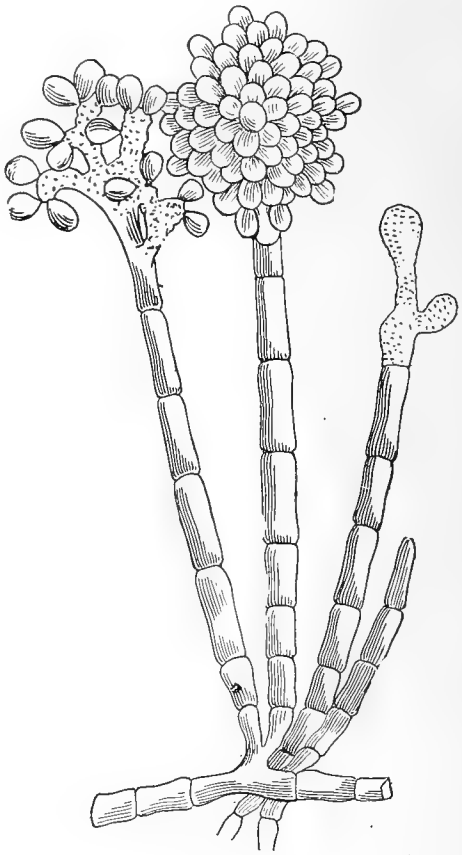
THE GOLDEN WEDDING TROUBLE.

(The Gardeners' Magazine.)

A CONSIDERABLE number of diseased Chrysanthemums have been handed to me for examination, the form called Golden Wedding suffering to the greatest extent, although the disease is unfortunately not by any means confined to this variety.

The disease is due to the attack of a minute fungus called Botrytis infestans Haszl., a species first detected in Hungary in 1876, where it attacked hemp plants in a wholesale way. During the interval nothing has been heard of this pest until the present season, when its widespread ravages are demonstrating to gardeners the capabilities of a minute fungus, and, we trust, also the necessity of becoming acquainted with the mode of life of destructive fungi generally, in which case waves of disease like the one under consideration would not be so prevalent as at the present day. The spores or reproductive bodies of the fungus are mature, and floating in the air, seeking what they may devour just about the season when Chrysanthemums are preparing to bloom, and find a congenial home on the tender upper portion of the Chrysanthemum stem, to which they are borne by the wind. Once on the moist stem, the spores germinate within a few hours, the delicate germ-tube entering the tissues through the stomata, and very soon develops into a branching weft of mycelium or "spawn" in the superficial cells of the plant. About three days after the fungus has made its first attack the mycelium has accumulated a goodly supply of material in its cells, derived entirely from the plant on which it is parasitic, and is ready to produce its fruit. At this stage, slender, pale olive-green branches are pushed through the stomata into the air, the tips remain colorless, become b oken up into three or four short, stout branchlets, each of which bears a large quantity of egg-shaped, colorless spores, which are at once blown away by the wind, and are ready to germinate the moment they come in contact with another Chrysanthemum stem. By this means of rapid reproduction it will be observed that when the parasite is once established the infection of a whole batch of plants may be accomplished within a week, especially in damp, warm weather.

At the first stage of attack the fungus, as already stated, pushes its fruiting branches through the stomata into the air, but as the mycelium spreads in the tissues of the plant the fruiting branches burst through the ruptured epidermis in clusters, and very soon the whole upper portion of the stem is covered with a short, velvety, olive-green nap, consisting entirely of the fruiting branches of the energetic little fungus, and when examined with a good pocket lens, the sparkling clusters of spores can be seen at the tips of the branchlets. Being a rare fungus—until the present season—its life-history is not known, but from analogy, it is not a complete individual in the condition we know it at present, but only a stage in the cycle of development of a cup-shaped, long-stalked fungus called selerotinia ; which form, if present, will develop next spring from the mycelium present in the old rotting stems of Chrysanthemums that have been attacked by the Botrytis form during the autumn. Next summer the sclerotinia form will produce spores, which, on finding their way onto a Chrysanthemum stem, will in turn produce the Botrytis condition. Even if no selerotinia form does exist, the mycelium of the Botrytis form will continue to grow and live through the winter in the diseased, rotten stems which the gardener considerately throws on the rubbish heap.



Botrytis Infestans.

Preventive measures are of the utmost importance. It is impossible to cure plants that are diseased. When the fungus is once in the tissues its mycelium spreads to every part, the leaves of the shoot often also showing the disease. The lower and harder portion of the stem is not attacked, being too hard to admit of the germinating spores penetrating its substance ; but the leaves it bears are finally attacked, being inoculated with the spores falling from the upper diseased portions. Plants that show indications of the disease should have the infected parts

cut off and burnt—not thrown on the rubbish heap—and apparently healthy plants should be syringed with a rose-colored solution of potassic permanganate (Condy's fluid), or a weak solution of Bordeaux mixture—one ounce of sulphate of copper, one-quarter ounce of quicklime dissolved in a gallon of water. As the fungus will in all probability appear next season, it would be well to anticipate it by using either of the above solutions soon after the appearance of the flowering shoots.

—G. Massee.

EUROPEAN VARIETIES IN AMERICA.

DURING the past season I tried a great many of the leading European varieties; but with two or three exceptions, they have proved unsuitable for American cultivation, and this notwithstanding that they had all received high honors in Europe. Possibly the difference in climate had a great deal to do with their failure here; but be that as it may, our domestic novelties grown under the same conditions proved infinitely superior.

—John N. May.

Summit, N. J.

A FINANCIAL VIEW.

My experience with all continental varieties has been such that I have decided in future to let them alone. I have for more than five years imported everything at fancy prices and high express charges, and the result has been that I have received generally rubbish of the most useless character These importations have not averaged one good variety per year, and this disappointment and loss, in addition to the trouble and expense of filling the greenhouses with sorts that must ultimately be discarded, and the flowers of which are too small or too poor in quality to be sold. It costs from two hundred to three hundred dollars per novelty of any value to discover those of good character, and this is an expenditure of actual cash that does not return. However reluctant I may be to resign it, I shall be compelled to let others carry on this necessary work in the time to come.

—Thos. H. Spaulding.

Orange, N. J.

ORNAMENTAL OUTDOORS.

It is gratifying to know that for the past few years we have been independent of foreign growers, so far as the production of new varieties of Chrysanthemums is concerned. In nearly all lines of plants we are accustomed to look abroad for novelties; but in the case of the golden flower, the eyes of the foreign grower are on us, as the very best varieties of to-day are either of American origin or imported from Japan through American houses. Whether this result has been brought about through better climatic conditions for ripening the seed and closer contiguity to Japan, or through other more subtle influences, need not enter into a review of the subject of these notes.

Prominent among the varieties received from Europe within the past three years, which is as far as it appears necessary to go backward, is Charles Davis, a bronze sport from Viviand Morel. Beauty of Exmouth is a very fine white, but a little weak in the neck for exhibition on long stems. Shown on a board, this beautiful variety is seen at its best. We have a good creamy-white sort in Mdlle. Therese Rey, and J. Shrimpton, of bright crimson color, might be called an improved Cullingfordii. L'Enfant des Deux Mondes, the white sport from Louis Boehmer, is excellent, and Florence Davis a very pretty white flower, tinged green. The latter variety, however, is troubled with a weakness of the neck, an infirmity by the way which we seem more anxious to avoid than the growers across the Atlantic, and simply because we no longer use the old-fashioned boards in our exhibitions. The main interest in European varieties centers now around the Delaux early-flowering sorts. These cannot compete in size and color with the great mass of later-flowering kinds; but for open air culture, the latter are practically useless in northern latitudes.

Too much stress has been laid, I think, on the fitness or unfitness of certain varieties for cut-flower purposes. The Chrysanthemum Society of America, being composed mainly of men who are growing the Chrysanthemum for cut flowers, is prone to regard new varieties from one point of view only. This I regard as a mistake. Horticulture is broader than the cut-flower market, and there is room without crowding for the cut-flower varieties, the pompons, the Anemones, the singles, the tasselled and all the other quaint forms. If, then, the committees of our Chrysanthemum society cannot see merit in any variety unless it is of a stated size and shape, or without certain lines of color, they should state distinctly that they speak only from the standpoint of the cut-flower grower. This would clear up a wrong impression which obtains in some quarters, viz., that they constitute the last court of appeal on everything connected with new varieties of Chrysanthemums.

We want greater variety both of form and color in the flowers, if this plant is to retain its hold upon the people. The Delaux or September-flowering section fills an important position in this regard, and it is to be hoped that such improvement will be made in them as has been made in the later-flowering varieties. The list is a long one, but the following are the cream of the tested sorts, all of which were in full bloom October 15th, of last year, and some of them in flower as early as September 25th Mdme. Charvin, rosy pink, white shadings; Eugene Farez, deep bronze, golden reverse; M. Gustave Grunerwald, lilac pink, a grand variety; Mdlle. Fleurot, white, tipped rose; Mdme. Gastellier, white, in bloom September 25th; M. Lefrancois, light pink, marked white; Veuve Clicquot, dull red and yellow; M. Frederic L'Usmayer, yellow and

crimson; M. Henri Galice, red and yellow; Mdme. Pichon, light pink; Georges Devred, canary-yellow; Mdme. Veuve Pasquier, creamy-white; Mdme. Ferdinand Bergman, pure white; Mdme. Greard, creamy-white; Mdme. Mathilde Cassagneau, light rose, reverse silvery-pink; Mdme. Mathilde Bettziche, creamy-white, marked light rose, lemon center; M. Valery Larbaut, deep rose and creamy-white, dwarf habit; Duchesse de Crussol, rich chrome yellow, reddish center; J. B. Duvoir, light pink, changing to white; Mdme. Marie Constans, silvery-white, lemon center; Gaetan de Venoge, yellow, rose edges; Mdlle. Jacob, white and lilac; Chev. Ange Bandiera, a grand variety, pink and white, with yellow center; Albert Chausson, yellow and deep crimson; M. Francois Katzer, deep rose and light yellow; Jean Nicholas, glossy rose and soft white; Mdme. B. Yung, deep crimson, shaded red; Mdme. Louis Lionnet, white, tinged rose; Vice-President Hardy, golden-yellow, bordered crimson; M. E. Vaucher, light red, marked white; Camille Bernardin, amaranth and brilliant carmine, edged white. The foregoing is the best selection that could be made from over two hundred varieties on trial.

In closing this paper I wish to make an earnest plea for naturally grown Chrysanthemums. Feed them well and pinch back the shoots so as to form a bush, and when the plants are in bloom leave all the informal sprays to nod and sway in their own graceful manner. I also want to emphasize the fact that the garden does not seem complete without Chrysanthemums, and many of them will bear the chill autumn blasts without shrinking. When the leaves are falling, the grass turning brown, and so many days bring leaden skies, the bronzes, yellows, pinks, whites and intermediate shades of the Chrysanthemum seem so appropriate in such setting that there would appear to be a serious void without them. These September-flowering sorts are in every way adapted to outdoor gardening, particularly in the North, as they will perfect their blossoms before the frosts become so severe as to injure them.

—Patrick O'Mara.

New York.

INSECT FRIENDS AND ENEMIES.

A LARGE number of the insects which infest Chrysanthemums are most injurious to the plants, and it would often seem that just as we have learned how to effectually check the ravages of one destructive pest, others even more rapacious come to renew the attack. But all of the insects found on these plants are not of this class, although it frequently happens that every creature possessing insect characters is considered among the enemies of vegetation. On the contrary, some insects are in reality most helpful to the growers of decorative plants, and it would be an excellent investment of a few leisure hours to devote them to some investigation of the habits of insects, so that the injurious ones could be readily distinguished from those of a beneficial character. It is wanton folly to destroy such insects as will enable us to preserve our plants in healthy condition. Rather should we strive to prolong their lives and increase their numbers. The insects most commonly found on Chrysanthemums are here named in alphabetical order, and some descriptions of them and their work, with instructions for the eradication of detrimental kinds, are given to enable the inexperienced to deal with all according to their deserts.

Ants.—The little brown ants so common in greenhouses and on plants grown therein are by no means injurious. Occasionally they appear in such large numbers that their presence is objectionable; but it should be remembered that they are great scavengers, and while working little or no injury to plants or structure. they speedily clear both of a lot of detestable matter in the form of dead and dying insects. Their presence should therefore be tolerated.

Black Aphis.—Entomologists have neglected their duty somewhat in failing to notice this much dreaded enemy of vegetation, although it has been privately described and given the provisional name of Aphis Domi. It multiplies with amazing rapidity, and is found on the young shoots and leaves of many cultivated plants, being very partial to Chrysanthemums, deforming the foliage and destroying its vitality. Happily, however, it is easily held in check by the frequent application of pyrethrum powder, or by fumigation with tobacco.

Caterpillars.—The green caterpillars which abound on the plants, indoors and out, all through the growing season, are very destructive. They live upon the fleshy portion of the leaves, leaving only the thin epidermal covering of the upper surface, and occasionally devouring the leaves bodily. Sometimes they also attack the soft young shoots, treating them in similar fashion. They are easily traced by their work and their blackish excrement, and they should be at once picked off and destroyed. Usually they are found on the under side of the leaves.

Chrysopa.—We have a friend in the larvæ of the lace-wing fly, of the group of insects known to entomologists under the name of Chrysopa, which is an insatiable enemy of aphides and kindred pests. This caterpillar is of greyish color, and nearly an inch in length. It kills and devours the minor insects in large numbers, and in this respect is certainly one of the best helpers of plant growers. The perfect insect, or fly, is extremely pretty, having beautiful lace-like wings and golden eyes.

Green Fly. Perhaps the most familiar of all green-

OLYMPUS.

NATURAL SIZE.

house insects is the Aphis, commonly known as the green fly. The young and tender branches of soft-wooded plants are its favorite abode, and where once it gets a footing it speedily becomes plentiful. The insects feed upon the juices of the plant, which soon shows the result in its sickly appearance and ultimate death. The insects and their deposits also render the foliage and flowers very unsightly, even before they have effected any serious physical injury. Tobacco smoke is the best remedy.

Lady Birds.—There are many kinds of these beautiful insects. The beetle-like creatures, with variously spotted red coats, are common everywhere during the summer months, and they sometimes make their appearance in greenhouses in winter and spring. They and their larvæ feed largely on the various aphides, and in this way do valuable work while they cause no injury to the plants over and among which they crawl. Sometimes they are very common, and appear to pervade every nook and corner, and at other times it is difficult to find a single specimen. They should never be destroyed, but if possible an effort should be made to increase their number among such plants as are subject to the attacks of aphides.

Mites.—Much havoc was made among Verbenas some years ago by insects commonly known as mites. This is the two-spotted mite, Tetranychus 2-maculatus, a close relative of the red spider. It appears to be common now in the greenhouses of many parts of the country, attacking plants of various kinds, Chrysanthemums among the number. It is a small, whitish insect, even more minute than the red spider, and affects the plants in much the same way. It is extremely difficult of eradication, and thrives apace in a dry atmosphere. The opposite conditions are not so favorable to its development, and greenhouses, including the walls, paths, plants, surface soil of benches, etc., to which it has gained access should therefore be kept continually damp, and damp in this case does not of necessity mean dripping wet. Persistence in this course will stamp it out more effectually than any known insecticide; although where it has been present in strong force, spraying with kerosene emulsion has proved efficient in dislodging it. The emulsion should be applied thin—twenty-five to thirty parts of water to one of the emulsion—and often, say three or four times a month. Two dressings applied in quick succession will probably annihilate all the fully developed insects on the plants, but the numerous eggs are still unaffected, and in the course of a week or two the plants are as bad as ever. A thin mixture is preferable to a thick one for the reason that it spreads more readily over every part of the plant, and some care should be taken to wet the entire plant. The insects are generally most numerous on the lower side of the leaves, and particular pains should be taken in applying the mixture to these parts. It is generally supposed that the peculiar "frozen" appearance of Golden Wedding and other varieties is due to the ravages of these insects, but this is a mistake. The trouble with those varieties is of an altogether different nature, and one that is traceable to a fungus, Botrytis infestans, which may be destroyed by a liberal use of Bordeaux mixture.

Red Spider.—Like the preceding, the red spider, Tetranychus telarius of scientists, is so small that it has often done serious injury before it is noticed. In a dry atmosphere it forms a regular maze of web-work on the under side of the leaves of the plants, and, if unchecked, in time extends its railroads of destruction over every part of the entire collection, sapping their vitality until they become blanched, withered and lifeless. The dry conditions are as essential to its existence as the juices of the plant which form its food, and therefore the treatment prescribed for the two-spotted mite is also the best in its case.

Syrphus.—It is pleasant to turn from these bold enemies to another of our friends in the larvæ of the Syrphus fly. It is a brownish creature, about half an inch in length, much enlarged behind and pointed in front. Living chiefly upon aphides, it hoists the object of its attack on its tentacle-like beak and drains it of its life substance.

Tarnished Plant Bug. — Among Chrysanthemum growers this pest is perhaps better known as the Chrysanthemum fly, and its scientific name is Lygus lineolaris. This insect is very common, and we are indebted to it for the injury known as blind growths or blind buds. It is of stout build, about one-fourth of an inch in length and of brownish or yellowish color. It attacks a great variety of plants, and seems especially fond of Chrysanthemums. Anyone who has collected seeds of our hardy herbaceous perennials in autumn must have come in contact with it, for it abounds in the flower heads of Asters, Solidagos, and the like, and may be at once recognized from its disagreeable odor when bruised. It punctures the young growth, buds and leaves of Chrysanthemums, extracting and subsisting on their juices, and thus renders them useless. Pyrethrum powder and kerosene emulsion are the best preventives of its attacks, and where the insects are few in number they may be collected by hand with little trouble.

Thrips.—Several species of these little insects infest garden plants. It is known that they injure the foliage by mutilation and by withdrawing its fluids, and their black deposits have the effect of putting a decided stop to the development of the leaves. When the dark, roundish spots are noticed, both surfaces of the leaves of plants out of doors should be thoroughly sprayed with tobacco-water, and plants in similar circumstances under glass should be fumigated with tobacco.

—M. B.

AUSTRALIAN METHODS.

THE culture of Chrysanthemums in Australia may be said to be in its infancy—a very promising baby so far, but still undeveloped. Seven years ago I attended a show of the Horticultural Society of New South Wales, and there first paid my homage to our queen. I have not been long enough in the country to know the previous history of the flower, but the samples then exhibited would pass unnoticed beside those of last season. The soil and climate differ so widely, according to locality, in this country, that it is only natural to hear a variety of opinions as to the sorts that thrive most satisfactorily under the different conditions. For instance, within a six-mile radius of Sydney there is the sandstone district, with a light and poor sandy loam, and the district of heavy clay, overlying shale. Again, near the coast, as at Sydney, we have a heavy rainfall—from fifty to one hundred inches per annum—and a continually moist atmosphere during the growing season; whereas, in the districts west of the Blue Mountains, the air is dry, while the soil in places is extremely rich, especially along the courses of the main rivers, where the alluvial flats indicate the future home of the Australian Chrysanthemum grower. My experiences, however, have not extended beyond Sydney, and I will therefore confine my remarks to that district.

Chrysanthemums here are grown for exhibition in two ways, either in pots or the open ground. The methods of pot culture are, I presume, common to the whole world. But since the management requires more time and care than most people can afford, this plan is only adopted by a few. There is, nevertheless, one essential difference in the treatment here as compared with that of England at least, viz., that the plants which have throughout their entire growth remained in the open air, are not removed to glass houses to bloom, but are protected from sun and rain by calico, or removed to any cool shelter, as a verandah or shed. The system generally pursued here is that of open garden culture, the following details of which apply to my own process. This I find differs somewhat from that of other growers, notably in the space allotted to each plant, and in the manner of training. I will begin the year's work in June, as the flowers are then past, and the unsightly growth has been removed. The old stools, now vigorous in the production of suckers, are taken up and planted again in a warm, airy situation, giving them a thorough dressing of lime to keep off slugs during the winter. The ground is then trenched lightly and left fallow until spring. In September it is again broken up, digging in a plentiful supply of farmyard or stable manure, also a little lime. October and November are the best months for planting. The sun is then very hot at times, consequently a cloudy day is usually chosen for this important operation.

About a month previous to this the cuttings have been taken from the old plants, and propagated in light soil carefully prepared, either in boxes or in the open ground. Many growers do not trouble even about cuttings, merely taking a rooted sucker from the parent plant. I have tried both and prefer the cuttings as usually affording dwarf plants of the sturdiest character, and the least liable to produce suckers. The rooted cuttings are planted two feet apart in rows two feet six inches or three feet asunder. The plants are arranged in the rows according to the height of the varieties, and stout stakes from four to seven feet high are driven in the ground beside them, one to each plant. As summer advances a mulch of stable litter is applied to the soil, and in dry weather the foliage and roots of the plants are well watered every alternate evening. The principal work now is the pinching of the laterals, each plant being allowed to mature from three to six flowers, more or less according to the strength of the variety. Grandiflorum, for example, also Sunflower and Edwin Molyneux, will carry six flowers, while Lady Trevor Lawrence, Mdme. Clemence Audiguier and others will bear only three good blooms. In training the plants, thin laths—those used by builders for plaster work, costing here about thirty-eight cents per hundred—are tied to the stakes horizontally, forming a trellis work. The tallest plants require three rows of laths, the medium two and the dwarfs one. The flower stems are tied to these with raffia, the last tie being about three inches under the flower bud. This plan is very efficacious against the heavy southerly gales which are prevalent throughout the summer, and it also enables the grower to pass between the rows without damaging the branches, besides giving a generally neat and orderly appearance to the plantation.

In January and February the pleasures of the chase commence, or in other words, the caterpillars must be hunted. The most troublesome of these is a small green one similar to that found on Rose leaves, and is to be detected by the curled leaf in which it encases itself. Unless constant search is made for this epicure, failure is certain, as nothing seems to satisfy it but the young growth at the apex of the stem. Later on a larger caterpillar will destroy an opening flower in a single night. Other insect pests, such as slugs, earwigs and aphides, are I believe known universally, and dealt with appropriately. The chief difficulty we have comes with the flowering period, and is in guarding the blooms from the heavy rains alternated by fierce sunshine. The past season has been a particularly trying one. Continuous rain throughout April produced a moist atmosphere which caused the flowers to damp off as soon as they had developed. Under such circumstances no shelter can preserve the flowers, but in general a sufficient protection is secured by fastening a conical cap of brown paper to stakes in such a position over each bloom as to guard it against rain and sun. A more satisfactory way is to construct a light framework of hardwood over the whole bed, fixing roller blinds of unbleached calico thereon, so that all the plants can be covered or exposed as desired. A cheap umbrella, preferably a white one, is another device which I

have adopted with much success, fastening it with wire to the stake of the plant. In any case, shelter of some sort is absolutely necessary, though I have found that too much shading causes the pink varieties to lose their color, Etoile de Lyon, for instance, developing a pure white flower under prolonged shade. Liquid manure is usually given twice a week during the month the buds take to expand, sulphate of ammonia, soot water and cow manure in turn.

Among the varieties most in favor here, I may say that the Japanese preponderate. Those of the incurved section seem to require a colder and drier climate than that of Sydney, but succeed admirably, I am informed, in the higher inland districts. For this reason they are neglected to some extent. However, I have noticed the following as the best incurved varieties yet exhibited in our city. Jeanne d'Arc, Jardin des Plantes, Lord Wolseley, Antonelli, Eve, Mabel Ward, Miss M. A. Haggis, Mrs. G. Rundle, Prince Alfred, Baron Beust, Miss Violet Tomlin, Guernsey Nugget, Ami Hoste, Empress of India, Lady Dorothy, Lord Eversley, Globe White, and M. R. Bahuant. It is noticeable that the Queen of England family, Lord Alcester, etc., are rarely exhibited, from the fact that they seldom show their true character here, generally coming out a straggling reflexed flower. I have given up this entire group in consequence. The most popular Japanese varieties are Lady T. Lawrence, Sunflower, E. Molyneux, Viviand Morel, Syringa, with its white sport; Thunberg, Etoile de Lyon, Mr. A. H. Neve, Mdme. C. Audiguier, Maiden's Blush, W. H. Lincoln, C mte de Germiny, Mrs. Fottler, Mrs. A. Carnegie, Eynsford White, Pelican, Mrs. Dunnett, with its sport, Mr. C. Bennett, originated in the garden of Mr. Bradley, Sydney; Mrs. Irving Clark, Grandiflorum, Violet Rose, Stanstead Surprise, L. Canning, Condor, Puritan, Val d'Andorre, Coronet, Mrs. Langtry, Mdlle. Paul Dutour, Mrs. W.K. Harris, Hamlet, Mrs. E.W. Clarke, Miss Annie Hartshorn, Mrs. C. W. Wheeler, Louis Boehmer, Mrs. J. Wright, Anna M. Payne, Mrs. C. Orchard, Ada Spaulding, William Stevens, Mr. H. Cannell, Pride of Madford, a beautiful Melbourne variety; Wm. Tricker, J. S. Dibbens, G. F. Moseman, Beauty of Castlehill, Mrs. E. D. Adams, E. G. Hill, and Cesare Costa. The reflexed varieties are very seldom grown, Cullingfordii and King of the Crimsons being the most prominent. The Anemones are coming into notice, as I have recently seen good blooms of some leading sorts. Seedlings of various types have been produced and exhibited here during the past three years, and some of them promise well.

The year 1892 is memorable for the foundation of the Australian Chrysanthemum Society, which it is hoped will do something to increase popular interest in the flower and stimulate the energies of growers in general. The prime mover in this association is Mr. Alfred Lee. The most successful exhibitor, and perhaps the largest grower in New South Wales, is Mr. Robert Forsyth, of North Sydney, whose gardener, Mr. Gates, has grown some wonderful specimens. With regard to the size of our blooms, I may say that the largest I have seen was one of Pelican, which measured ten inches in diameter. The average exhibition flowers are from five to eight inches across, while the depth seldom exceeds three inches. —**H. J. Carter.**

Sydney, New South Wales.

CANADIAN NOTES.

THE history of the Chrysanthemum in Canada is not a very long one, as previous to our first show in 1890 it was not very much grown. A few private growers with greenhouses had small collections, mostly imported from England, and made up in great part of various forms of the Chinese and pompon types. The florists only grew a few of them. Elaine was then considered the best white. Tokio I also remember as a bronzy yellow; but there was no attempt to disbud, or to go in at all for large exhibition flowers. I think it a great pity that the pompons have been almost entirely discarded. There are still a few of them to be seen, but very few. They make the prettiest little bush plants imaginable. Since 1890 the improvement in the varieties grown, style of cultivation and the size of the blooms have been simply wonderful. And now we have all the new varieties up to date, while our annual exhibitions bring out blooms of as fine quality as are to be seen anywhere. There seems to be no flagging in the enthusiasm either of the florists or the general public. Indeed, it rather spreads from year to year, and well it may. As a matter of fact I cannot think of a better flower for making a show bright and attractive in the eyes of all the people, or one calculated as capable of doing so much good work in promotion of the best interests of floriculture in particular, and incidentally of gardening in general.

Roses and Carnations, of course, have a place in these exhibitions, and it has been demonstrated that their introduction does not in any way affect the popularity of the Chrysanthemums. The people come primarily to see the Chrysanthemums, but we have found that a variety of attractions is by no means distasteful to them.

I have forwarded you a copy of our latest prize list, and you will see from it that the prizes are given simply for plants and blooms of Chrysanthemums, without regard as to the class—incurved, Japanese, pompon or Anemone—to which they belong. Next year I think we shall probably make a radical change in it and call for flowers and plants of the various types, though I am afraid it is going to be rather difficult to draw the line as to where the types begin and end. But something has to be done in that direction, or we shall soon leave out beauty altogether and get nothing but size. —**A. H. Ewing.**

Toronto, Canada.

IN FAR CHINA.

THE origin of the cultivated Chrysanthemum is a difficult question to settle with certainty. Induction, however, would suggest that C. Indicum, which is a common weed on the hills of South China, has a *prima facie* claim to the honor of being the progenitor of the brilliant varieties that we now find in such abundant diversity. C. Sinense, the garden Chrysanthemum of Japan, is cultivated in China, and is supposed by some to be of Japanese origin. But there happens to be evidence that the Japanese owe their semi-civilization to China; and it is probable that the partially improved Chrysanthemum was introduced from the latter country, and being stimulated by favorable conditions of climate and high cultivation, acquired its distinct characteristics.

It is difficult to say when the Chrysanthemum was first mentioned in Chinese literature. On the authority of Dr. H. Trimen we learn that C. Indicum was cultivated in Ceylon before 1678, but I have been told that Chinese works of a much earlier date refer to the Kuk Fa, or

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Chrysanthemum. Unfortunately the term has recently been applied, rather indiscriminately, to such plants as the Chinese Aster (Callistephus), the Marigold (Calendula), and the double forms of Chamomile (Anthemis nobilis) and the common European Daisy (Bellis perennis), etc. An analysis of the written character occasionally gives a hint as to the origin of a Chinese name, and in this case the term Kuk Fa (1), that is, Chrysanthemum Flower, has its significance. The character kuk (2), when reduced to its elements, is formed from the radicals tso (3) plants, pau (4), a bunch, and mai (5), seeds, and the consolidated character has a formative in the work kuk (6), a closed hand, or to grasp, which has the same verbal sound and is formed of the same radicals, with the addition of the radical shau (7), a hand. The numbers following the Chinese terms refer to the written form of these words here reproduced, which will perhaps convey a better understanding of the writer's idea than any English explanation.

At this time it seems very probable that the term had been chosen on account of the resemblance of the florets of the Chrysanthemum to the fingers of the hand when closed inward on the palm. And this is the meaning of the word as given me by my Chinese tutor, so that the literal translation of Kuk Fa would be Closed Hand Flower. Now this would suggest the important probability that the incurved Chrysanthemum must have been known to the Chinese at a period when their written language was still in process of development. The word "kuk," to incurve the fingers, or to grasp, has every appearance of having been formed from the older word "kuk," an incurved Chrysanthemum. The sequence of the radical formation and identity of the verbal sound and tone marks all point to this conclusion. If some Chinese sinologue could give the date of the publication in which the term "kuk" first appeared, an interesting light might be thrown on the antiquity of Chrysanthemum culture in China, as I think we may safely assume that the incurved variety is a cultivated form.

Frequent mention is made of the Kuk Fa in Chinese poetry and folklore, and Celestial artists of bygone ages embellished frescoed walls and screens with pictures of the flowers; and it still ranks with the Pæony and the New Year Lily (Narcissus Tazetta) as one of the favorite flowers of that remarkable race of people. In South China the cultivation of the Chrysanthemum is attended with some difficulty, due to the extreme heat and moisture of the summer months. It is usually grown in a shady position. The soil used is the rich manurial mud which accumulates in a shale-like sediment in their rivers and ponds. This is broken up into disks about an inch in diameter, after being dried in the sun, and is then thrown into the pots without crocks or any kind of drainage. But there is little danger of water becoming stagnant in the compost, as the disks retain their knobby form and thus preserve a free passage for both air and water. The hair of pigs is frequently mixed with the soil, and this also tends to keep the compost open where it might otherwise prove to be too retentive.

Cuttings are taken with a heel shortly after the plants have ceased flowering. Mud of the same character as that used in potting is dried, ground down fine, mixed with water and kneaded into the form of a paste. A small pellet of this, about the size of a marble, is worked around the base of each cutting; and the desired number of cuttings having been treated in this way, they are then plunged in a pan containing sand. The sand is kept moist until the roots of the cuttings begin to show through the pellets, when the plants are transferred to their permanent pots. Four or five cuttings, with the pellets intact, are planted in a pot ten or twelve inches in diameter by four or five inches deep. The Chinese do not believe in shifting their plants a second time Neither do they believe in watering them while the sun is shining; they water overhead morning and evening. The plants frequently wilt badly during the day, but recover again at night. One would suppose that the constant wilting would cause them to lose their lower leaves, but the Chinese overcome this in training their plants.

When the stems are about nine inches high, they are bent down horizontally around the pot, two or three inches from the soil. The tops are then pinched off, and two or three laterals from the back nodes are trained up as flowering stems. It is only the cuttings taken very late in the season that are allowed to grow at will and bloom on their original points. The Chinese gardeners are well aware of the importance of disbudding, when large flowers are required; but they do not practice it to the rigorous extent of leaving only one bud on the stem. They are exceedingly expert in grafting, and often work a few different varieties on one stock. Their varieties are innumerable. The Celestial is quick to detect the slightest variation between two plants that we would unhesitatingly class together, and he immediately dubs the aberrant freak with a glorified name. Some of these names prove that the Celestial fa wong (gardener) is a person of poetic imagination. Refulgent Loveliness, Emblem of Felicity, Surpassing Eminence, Golden Rapture, Heavenly Purity, and so on, are a few that I have translated from the written characters. A large number of varieties of foreign origin are now found in the treaty ports of China and other places frequented by foreigners, and it is therefore difficult to say what is of purely Chinese origin. Horticulture is now at a standstill in China. Very few novelties are raised by artificial crossing, though at one time this branch of gardening must have received considerable attention. The Chinese now live in the delusion that horticulture, like many other arts and accomplishments, reached perfection many centuries ago, and to venerate the old and despise the new has been the creed of China from times immemorial. As a race they have all the painstaking qualities that are so essential in gardening; and should the rude awakening which Japan has recently administered to the Celestial kingdom have permanent effect, she may rise again on the wave of progress, and assuredly horticulture will then advance with rapid strides. I am doubtful if the natives of any other country have such a wealth of raw material, and the peculiar qualities for turning it to account, as have the inhabitants of this interesting part of the world.

—**A. B. Westland.**

Santa Barbara, Cal.

VARIETIES OF THE FUTURE.

A GREAT advance has been made in the Chrysanthemum during the past ten years, in the size and form as well as in the color of the flowers, and this leads one to contemplate as to where we shall end. Grand as are many of the varieties, the ideal is not yet reached, at any rate not in all the classes. So far as mere size is concerned, we have attained all that possibly can be desired. Anything larger than many of the varieties now cultivated would be simply a monstrosity; and it certainly would exceed the boundary line of good taste, so that we may well dismiss the quality of size as having reached a satisfactory limit. We may yet make good progress in the form and color of the flowers; also in the habit of the plant. And, of course, growers will differ in opinion as to what constitutes perfection in each and every attribute; and so long as we have exhibition growers, commercial growers, and those who cultivate the plants out of pure regard for them, so long will variation in the plants and flowers continue to be sought after.

So it follows that we must have many types of perfect form. For a bloom of medium size, I consider Ivory one of our best finished varieties, and Major Bonnaffon is perhaps without an equal of its type. But who can say that Niveus is not also a perfect flower, although totally distinct from either of the foregoing? The shape of that grand old variety, W. H. Lincoln, is considered very fine by some; but to my mind it is rather stiff and formal. Mrs. Wm. H. Rand is another type quite the opposite of Major Bonnaffon, yet what lover of Chrysanthemums would care to be without it? Many varieties of different character are similarly complete. But some are faulty in other particulars; and thus, perhaps, it would be most accurate to say that there are flowers which it would be impossible to change in form with advantage; but when the form and color of the flowers are considered in connection with the habit of the plants, there is yet considerable room for improvement.

The matter of color merits a great deal of attention on the part of those who are making an earnest study of the work of producing new varieties. We have whites in abundance, from the purest shade to the greenish tone of Miss Minnie Wanamaker, and on to the creamy color of

Mayflower; there are yellows of all intermediate shades between the rich orange of Eugene Dailledouze and the pale straw tint of Sayonara; but in pinks and crimsons there is a large field for endeavor. The pure pink has yet to come, and I am of the opinion that we shall have it in less than three years. We need a pink of the shade of a good Grace Wilder Carnation, and a large flower of the matchless color of Cullingfordii would be very desirable. I feel quite safe in predicting that we shall produce good pink and crimson varieties, with flowers of a size and form to satisfy the keenest critic, and in addition to these, there are doubtless many pleasant surprises in store for us in the years to come. The Chrysanthemum of the future will possess individually a greater aggregation of good qualities than most of our best varieties do now. They will be of dwarf habit, or moderately so, with stout stems, and heavy, luxuriant foliage, and the bare stem and weak neck will gradually disappear. At the present time there are few white varieties of better habit than Mrs. Bullock; and for a yellow, in stem and foliage; W. H. Lincoln is unsurpassed; while Niveus, although rather tall, has a grand stem, with its beautiful leaves clear to the base of the flower. Maud Dean, for stem, foliage and flower, comes pretty close to the ideal pink. Whether the Chrysanthemum will ever attain to the dignity of what may be justly considered a fragrance, is a question on which I cannot pass an opinion. I believe the advance made in this direction so trifling, if any, that it gives us little hope for the future.

—**Wm. Scott.**

Buffalo, N. Y.

CROWN BUDS AND TERMINALS.

I THINK one may safely say that a crown bud is an abortion, and if the plant were left to its own way such buds would never develop. Terminals in the large majority of cases produce the best blossoms, and they are typical of the variety at all times.

—**James Brydon.**

Yarmouthport, Mass.

BOTH USEFUL.

There is a great difference in the growth of varieties, as all who are at all familiar with the plants well know. I am fully cognizant of the fact that many good growers claim the habit of growth has little or no effect on the quality of the flowers, but my experience has proved the opposite beyond a doubt. The short-jointed varieties produce the best flowers from crown buds, and terminals develop the most satisfactory blooms on those with lengthy internodes. But it is advantageous to select the terminals in the latter case for an additional reason. The stems of flowers produced from crown buds are nearly always destitute of foliage in a considerable space at the top, and as will be obvious, this would be greatest in the long-jointed varieties. These peculiarities always guide me in the selection of the buds, and I have found that the plan works well.

—**John Dyer.**

Short Hills, N. J.

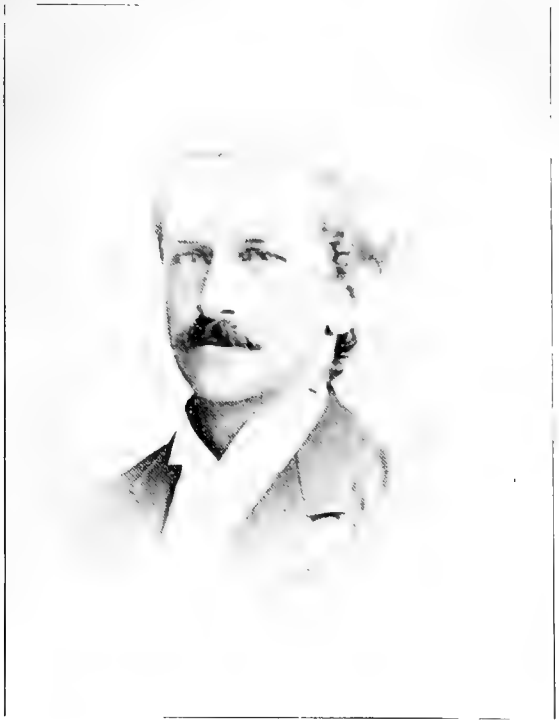
GENERAL PRINCIPLES.

Were one to do full justice to this subject, he would require a thorough knowledge of each variety—just think once what that means—and I do not feel equal to the task. One can furnish general principles, however, if not all the details. In the first place, there are some special rules to be observed. With the early sorts a crown bud produces a bloom about ten days in advance of the terminal, and this in itself is an important item. Yellow Queen and Mrs. E. G. Hill illustrate the point in question.

Crown buds in general are preferable for exhibition flowers, especially when they are shown on boards, as was formerly the practice. Foliage and stem not being taken into account, the blooms from crown buds average larger, fuller, clearer tone of color, and have more substance than the terminals. Golden Hair from the crown bud is a rich chrome yellow, and shows little suggestion of an eye; but the terminal is of a decided bronze shade with a quite open center. White Boehmer, or L'Enfant des Deux Mondes, shows but little center in the crown bud. Varieties that are inclined to produce weak, crooked stems to terminals are comparatively straight and stiff under crowns, as we find in Edward Hatch, Princess of Chrysanthemums and Col. W. B. Smith. Select crown buds and these varieties are strong and shapely enough for any purpose. Hicks Arnold and Golden Gate improve in color tone with similar treatment. A crown bud of Waban, well done, is one of the largest and most perfect exhibition blooms to date. As a terminal it may be of large diameter, but is generally flimsy in texture and weak in color. This is also true of such bronzes as Comte de Germiny, G. F. Moseman, Crown Prince and the like.

Almost all dwarf habited Chrysanthemums give the best results from crown buds. The opposite is the general rule with regard to the latest varieties; and as I prefer crown buds for the earliest blooms, so I choose terminals for the latter. For mid-season commercial use the terminals are rather to be preferred, on account of their shorter neck and neater foliage. But I maintain that a better show can be secured from crown buds when the blooms are desired for exhibition purposes only. Judged from the artistic standpoint, there is not the all around finish—stem, foliage and flower—in the crown bud that there is in the terminal, hence the latter has more general utility and gives greater satisfaction commercially as a cut flower.

These simple remarks cover the ground as to general principles, still, of course, there are exceptions, and exceptions. As I have often stated, to grow a given Chrysanthemum well, one needs to know its own separate individu-



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ality. Treatment that will suit one variety is no safe rule for another. It is useless to expect many crown buds from late struck cuttings. Naturally these produce mostly terminals, and it is the early propagated stock that is prolific in crowns. The English experts invariably allow their plants a long season of growth, and it is for this reason that their writings abound with references to the crowns. And these growers obtain magnificent blooms in this way, but the plants that produce them are exceedingly lanky—almost as tall as Jack's famous bean stalk. I have observed that the new growth about the crown bud develops a plant that blooms earlier and one of more compact habit than the ordinary soft-struck cutting. Although crown buds are developed first, yet they require a longer time to mature ordinarily than terminals, thus it follows that early varieties must be started earlier than the general stock to secure the best results. —**Grove P. Rawson.**

Elmira, N. Y.

THE BEST VARIETIES.

A JUDICIOUS selection of varieties is of as great importance as any other matter connected with Chrysanthemum culture. Much time and labor must be lost before one can gain an accurate knowledge of the most suitable kinds for specific purposes and localities, and it is with a view to lessening this expense of time, labor and money that the following lists have been prepared. These selections are made by people who from long experience and observation are most competent to give a correct estimate of the value of any variety, and all the more important Chrysanthemum centers of the country are represented in the reports. The best ten varieties for making good plants, and an equal number of those that have proved most reliable in the production of blooms for cutting, are given in each case. An audit of these returns, therefore, affords the safest means of arriving at a correct conclusion as to the varieties of the greatest general utility.

Baltimore, Md.—*Plants*—G. W. Childs, Ivory, Mrs. J. G. Whilldin, Eda Prass, Tuxedo, Miss M. Wanamaker, Cullingfordii, W. H. Lincoln, Mrs. Wm. Bowen, Ada Spaulding. *Blooms*—Ivory, Niveus, The Queen, Viviand Morel, Eugene Dailledouze, Golden Wedding, Ermenilda, G. W. Childs, Mrs. E. G. Hill, Col. W. B. Smith.—*Edwin A. Seidewitz.*

Boston, Mass.—*Plants*—Major Bonnaffon, G. W. Childs, Ivory, Louis Boehmer, President Hyde, W. H. Lincoln, J. C. Vaughan, M. Boyer, Primula, Ernst Asmus. *Blooms*—Major Bonnaffon, Eugene Dailledouze, Mrs. Jerome Jones, Marguerite Jeffords, Niveus, Robt. McInnes, The Queen, Golden Gate, Viviand Morel, C. B. Whitnall.—*Arthur H. Fewkes.*

Buffalo, N. Y.—*Plants*—Ivory, Mrs. W. K. Vanderbilt, L. Canning, Mrs. J. G. Whilldin, W. H. Lincoln, Hicks Arnold, Etoile de Lyon, Maud Dean, L. Boehmer, Cullingfordii. *Blooms*—Ivory, Niveus, The Queen, Mrs. R. Craig, Viviand Morel, Maud Dean, Mrs. A. J. Drexel, Yellow Queen, Mrs. C. Lippincott, W. H. Lincoln.—*Wm. Scott.*

Burlington, Vt.—*Plants*—Ivory, Eda Prass, Cullingfordii, W. H. Lincoln, Jos. H. White, Clinton Chalfant, Miss Minnie Wanamaker, Louis Boehmer, President Hyde. Domination. *Blooms*—Ivory, Mrs. H. Cannell, Kioto, Mrs. J. G. Whilldin, Miss M. Wanamaker, Niveus, W. H. Lincoln, Maud Dean, Harry Balsley, Mrs. C. Lippincott. —*W. A. Lee.*

Chattanooga, Tenn.—*Plants*—Ivory, Gloriosum, Eda Prass, Jessica, Lilian B. Bird, Mattie Bruce, Good Gracious, Golden Wedding, Viviand Morel, W. H. Lincoln. *Blooms*—The Queen, Kioto, Good Gracious, Viviand Morel, Waban, Mrs. Cleveland, Mrs. Harrison, Ada Spaulding, Ed. Hatch, E. G. Hill.—*Elizabeth Fry.*

Chicago, Ill.—*Plants*—Niveus, The Queen, Eugene Dailledouze, Major Bonnaffon, W. H. Lincoln, Viviand Morel, Col. W. B. Smith, Harry Balsley, G. W. Childs, Maud Dean. *Blooms*—Lady Playfair, Viviand Morel, Eugene Dailledouze, Major Bonnaffon, The Queen, Harry Balsley, Mutual Friend, Mrs. A. J. Drexel, Col. W. B. Smith, Wm. Seward.—*John Thorpe.*

Cincinnati, O.—*Plants*—Ivory, G. W. Childs, H. L. Sunderbruch, W. H. Lincoln, Domination, Princess Beatrice, Hicks Arnold, Viviand Morel, Ada Spaulding, Mutual Friend. *Blooms*—Challenge, Ada Spaulding, Viviand Morel, Eugene Dailledouze, The Queen, President W. R. Smith, G. W. Childs, H. L. Sunderbruch, Miss Minnie Wanamaker, Ivory.—*H. L. Sunderbruch.*

Denver, Colo.—The following lists were prepared by the leading growers of Denver, and forwarded through the courtesy of Mr. E. A. Wood. *Plants*—W. H. Lincoln, G. W. Childs, Niveus, Miss M. Clarke, Hicks Arnold, E. G. Hill, Viviand Morel, Lady Trevor Lawrence, Louis Boehmer, L. Canning. *Blooms*—Niveus, Mrs. Jerome Jones, Eugene Dailledouze, Golden Wedding, Major Bonnaffon, Viviand Morel, President W. R. Smith, Harry Balsley, Robt. McInnes, G. W. Childs.—*Denver Growers.*

Detroit, Mich.—*Plants*—Ivory, Miss Minnie Wanamaker, L'Enfant des Deux Mondes, W. H. Lincoln, Clinton Chalfant, Golden Hair, Improved Louis Boehmer, Eda Prass, G. W. Childs, Portia. *Blooms*—Ivory, The Queen, Niveus, Mrs. Jerome Jones, Mrs. E. G. Hill, Harry Balsley, Ermenilda, Marion Henderson, Eugene Dailledouze, W. H. Lincoln.—*Elmer D. Smith.*

Hartford, Conn.—*Plants*—Hicks Arnold, Golden Gate, Mrs. John H Starin, Ivory, Good Gracious, Mrs. Jas. B. Crane, W. H. Lincoln, Pitcher & Manda, G. W. Childs, Cullingfordii. *Blooms*—Niveus, Ivory, Jessica, Golden Wedding, Eugene Dailledouze, Viviand Morel,

Maud Dean, Cullingfordii, G. W. Childs, Hicks Arnold.—*John Dallas.*

Indianapolis, Ind.—*Plants*—Domination, Jos. H. White, Ivory, L. Canning, Major Bonnaffon, W. H. Lincoln, Hicks Arnold, Falstaff, Eda Prass, G. W. Childs. *Blooms*—Niveus, The Queen, Mrs. Potter Palmer, Eugene Dailledouze Major Bonnaffon, Golden Wedding, H. L. Sunderbruch, Mrs. E. G. Hill, Viviand Morel, G. W. Childs.—*Wm. G. Bertermann.*

Louisville, Ky.—*Plants*—Mrs. W. F. Norton, Jos. H. White, Eda Prass, Good Gracious, G. W. Childs, Clinton Chalfant, H. L. Sunderbruch, Major Bonnaffon, Kioto, Jessica. *Blooms*—Marie Louise, The Queen, Niveus, Mrs. E. G. Hill, Lady Playfair, President W. R. Smith, Yellow Queen, Golden Wedding, Major Bonnaffon, Apollo. *Henry Nanz.*

Milwaukee, Wis.—*Plants*—Ivory, Gloriosum, Jos. H. White, Cullingfordii, Major Bonnaffon, The Queen, Jessica, L. Canning, Louis Boehmer, Viviand Morel. *Blooms*—Niveus, Eugene Dailledouze, President W. R. Smith, Ed. Hatch, Harry May, Miss Minnie Wanamaker, Domination, W. H. Lincoln, The Queen, Viviand Morel. *John M. Dunlop.*

Mobile, Ala.—*Plants*—G. W. Childs, L. Canning, Eda Prass, Mermaid, Mary Wheeler, Miss Kate Brown, Mrs. E. W. Clark, Century, L' Enfant des Deux Mondes, C. B. Whitnall. *Blooms*—Eugene Dailledouze, Golden Wedding, Niveus, The Queen, President W. R. Smith, Dr. Callandreau, Mrs. A. J. Drexel, Mrs. A. Carnegie, V. H. Hallock, Lady Trevor Lawrence.—*Maria Minge.*

Montreal, Can.—*Plants*—Ivory, L. Canning, Domination, W. H. Lincoln, Tokio, Duchess, Mdme. E. Fabre, Golden Rod, G. W. Childs, Hicks Arnold. *Blooms*—The Queen, Niveus, Golden Wedding, Viviand Morel, W. H. Lincoln, Mrs. Geo. West, Domination, Mrs. F. L. Ames, E. G. Hill, Harry May.—*James McKenna.*

Newport, R. I.—*Plants*—A. G. Ramsay, Harry May, Marie Louise, Niveus, Jos. H. White, Viviand Morel, Ed. Hatch, Goliath, Major Bonnaffon, Minerva. *Blooms*—Eugene Dailledouze, Golden Wedding, Niveus, H. L. Sunderbruch, Viviand Morel, Frank Thomson, Viscountess Hambledon, G. W. Childs, Harry Balsley, Mrs. Jerome Jones.—*Alexander MacLellan.*

New York, N. Y.—*Plants*—Viviand Morel, Maud Dean, Ivory, The Queen, L. Canning, W. H. Lincoln, Minerva, G. W. Childs, Hicks Arnold, Inter Ocean. *Blooms*—Eugene Dailledouze, Major Bonnaffon, W. H. Lincoln, Niveus, Mrs. Jerome Jones, Viviand Morel, Maud Dean, Ada H. LeRoy, G. W. Childs, Mrs. A. J. Drexel.—*Eugene Dailledouze.*

Philadelphia, Pa.—*Plants*—Ivory, Miss Minnie Wanamaker, W. H. Lincoln, Domination, Major Bonnaffon, G. W. Childs, Cullingfordii, Source d'Or, Eda Prass, Ermenilda. *Blooms*—Viviand Morel, Niveus, Miss Minnie Wanamaker, Mayflower, Eugene Dailledouze, Major Bonnaffon, G. W. Childs, Maud Dean, Col. W. B. Smith, The Queen.—*Edwin Lonsdale.*

Portland, Me.—*Plants*—Cullingfordii, Tuxedo, Domination, Ivory, W. H. Lincoln, President Hyde, Mrs. Humphreys, Viviand Morel, Elaine, Niveus. *Blooms*—G. W. Childs, W. H. Lincoln, Kioto, Golden Wedding, President W. R. Smith, Niveus, Ivory, Domination, Cullingfordii, Miss Minnie Wanamaker.—*Alexander Wallace.*

San Francisco, Cal.—*Plants*—The Queen, Golden Gate, Niveus, Golden Wedding, Mrs. J. Geo. Ils, Eugene Dailledouze, Viviand Morel, Charles Davis, Mrs. E. D. Adams, Waban. *Blooms*—Emma Hitzeroth, H. Cannell, Good Gracious, The Queen, Florence Davis, Challenge, Major Bonnaffon, W. N. Rudd, W. H. Lincoln, Morning Mist.—*Imogene E. Johnson.*

St. Louis, Mo.—*Plants*—John Lane, L. Canning, Ivory, Harry May, Miss M. Wanamaker, Major Bonnaffon, Louis Boehmer, W. H. Lincoln, Mrs. J. G. Whilldin, Miss Kate Brown. *Blooms*—W. G. Newitt, Major Bonnaffon, Viviand Morel, The Queen, Pitcher & Manda, H. L. Sunderbruch, Golden Wedding, President W. R. Smith, Harry Balsley, Mrs. C. Lippincott.—*Emil Schray.*

Toronto, Can.—*Plants*—Ivory, W. H. Lincoln, President W. R. Smith, Domination, Lilian B. Bird, G W. Childs, Ada Spaulding, Miss M. Wanamaker, Hicks Arnold, Puritan. *Blooms*—Niveus, Mrs. James Eadie, Golden Wedding, Viviand Morel, Maud Dean, The Queen, L'Enfant des Deux Mondes, Harry May, Major Bonnaffon, Eugene Dailledouze.—*A. H. Ewing.*

Washington, D. C.—*Plants*—The Queen, Marie Louise, Ivory, Eugene Dailledouze, Golden Gate, Hicks Arnold, Mrs. E. G. Hill, Viviand Morel, G. W. Childs, Anna Woods. *Blooms*—Niveus, Golden Wedding, Yellow Queen, Dr. Jules Callendreau, President W. R. Smith, The Queen, Mrs. E. G. Hill, Viviand Morel, G. W. Childs, Mrs. Bayard Cutting.—*Philip Gauges.*

Name. **Plants.**	*Votes.*
Ivory	17
W. H. Lincoln	17
G. W. Childs	15
Viviand Morel	10
Hicks Arnold	9
Eda Prass	8
L. Canning	8
Major Bonnaffon	8
Cullingfordii	7
Domination	7
Louis Boehmer	6
Miss Minnie Wanamaker	6
Joseph H. White	5
Niveus	5
The Queen	5
Ada Spaulding	3
Clinton Chalfant	3
Eugene Dailledouze	3
Golden Gate	3
Good Gracious	3
Jessica	3
Maud Dean	3
Mrs. J. G. Whilldin	3
President Hyde	3

Name.	*Votes.*
Gloriosum	2
Golden Wedding	2
Harry May	2
L'Enfant des Deux Mondes	2
Lilian B. Bird	2
Marie Louise	2
Minerva	2
Miss Kate Brown	2
H. L. Sunderbruch	2
Tuxedo	2
A. G. Ramsay	1
Anna Woods	1
C. B. Whitnall	1
Century	1
Charles Davis	1
Col. W. B. Smith	1
Duchess	1
Ed. Hatch	1
E. G. Hill	1
Elaine	1
Ermenilda	1
Ernst Asmus	1
Etoile de Lyon	1
Falstaff	1
Golden Hair	1
Golden Rod	1
Goliath	1
Harry Balsley	1
Improved Louis Boehmer	1
Inter Ocean	1
J. C. Vaughan	1
John Lane	1
Kioto	1
Lady Trevor Lawrence	1
Mary Wheeler	1
Mattie Bruce	1
M. Boyer	1
Mdme. E. Fabre	1
Mermaid	1
Miss M. Clarke	1
Mrs. E. D. Adams	1
Mrs. E. G. Hill	1
Mrs. E. W. Clark	1
Mrs. Humphreys	1
Mrs. James B. Crane	1
Mrs. J. Geo. Ils	1
Mrs. John H. Starin	1
Mrs. W. F. Norton	1
Mrs. W. K. Vanderbilt	1
Mrs. Wm. Bowen	1
Mutual Friend	1
Pitcher & Manda	1
Portia	1
President W. R. Smith	1
Primula	1
Princess Beatrice	1
Puritan	1
Source d'Or	1
Tokio	1
Waban	1

Flowers.

Name.	*Votes.*
Niveus	18
The Queen	17
Viviand Morel	17
Eugene Dailledouze	14
Golden Wedding	12
G. W. Childs	10
Major Bonnaffon	10
President W. R. Smith	8
W. H. Lincoln	8
Ivory	7
Harry Balsley	6
Maud Dean	6
Miss Minnie Wanamaker	5
Mrs. E. G. Hill	5
Mrs. Jerome Jones	5
H. L. Sunderbruch	4
Mrs. A. J. Drexel	4
Col. W. B. Smith	3
Domination	3
Harry May	3
Kioto	3
Mrs. C. Lippincott	3
Yellow Queen	3
Ada Spaulding	2
Challenge	2
Cullingfordii	2
Dr. J. Callendreau	2
Ed. Hatch	2
E. G. Hill	2
Ermenilda	2
Good Gracious	2
Lady Playfair	2
Robt. McInnes	2
Ada H. LeRoy	1
Apollo	1
Emma Hitzeroth	1
C. B. Whitnall	1
Florence Davis	1
Frank Thomson	1
Golden Gate	1
H. Cannell	1
Hicks Arnold	1
Jessica	1
Lady Trevor Lawrence	1
L'Enfant des deux Mondes	1
Marie Louise	1
Marion Henderson	1
Marguerite Jeffords	1
Mayflower	1
Morning Mist	1
Mrs. A. Carnegie	1
Mrs. Bayard Cutting	1
Mrs. Cleveland	1

Name.	*Votes.*
Mrs. F. L. Ames	1
Mrs. Geo. West	1
Mrs. Harrison	1
Mrs. H. Cannell	1
Mrs. Jas. Eadie	1
Mrs. J. G. Whilldin	1
Mrs. Potter Palmer	1
Mrs. R. Craig	1
Mutual Friend	1
Pitcher & Manda	1
V. H. Hallock	1
Viscountess Hambledon	1
Waban	1
W. G. Newitt	1
Wm. Seward	1
W. N. Rudd	1

These analyses show that American varieties lead as plants and for cut flowers. Ivory (white) and W. H. Lincoln (yellow) are equally good as plants. The latter is an American importation from Japan, while Ivory was raised by Wm. K. Harris, the veteran grower of Philadelphia The best crimson for plants, and likewise for blooms, is John Thorpe's G. W. Childs. The best pink for both purposes, if the rosy tint of the flower may be so designated, is the European Viviand Morel, and Hicks Arnold, one of Pitcher & Manda's varieties, leads the bronzes as a plant The peerless Niveus (white) of Smith & Son is given the position of honor as a cut flower, closely followed by The Queen, Fred S. Walz's grand variety of the same color. Hill's magnificent Eugene Dailledouze is considered the best yellow for cut blooms, and Henderson's imported Golden Wedding has many admirers.

—M. B.

PROGRESS IN NEW ZEALAND.

LITTLE more than fifty years have elapsed since there was anything like a general settlement of this country, and the most progressive nations fail to make any large amount of progress, even under the most favorable circumstances, in so short a period. But a great deal can be done with a fertile soil in a temperate climate, and the early colonists soon learned to turn these to advantage. The love of gardening, however, is so strong in the English speaking races that I feel almost certain it would assert itself in a desert. These people, indeed, on your own continent, as well as in most other parts of the world, have made many wildernesses bloom as veritable gardens. It is not strange, therefore, befriended as we are with all that is essential to the accomplishment of good work, to find that we have advanced in horticulture at a very rapid pace. And horticulture never yet flourished long without her sister art of floriculture.

Thus among other flowers we soon learned to appreciate Chrysanthemums, and to grow them. Very soon after the Japanese varieties had become popular in Europe, we also took a fancy to them, and they soon became prime favorites throughout the land. The enthusiasm grew until we had to have an exhibition. It was, to be sure, only a very small affair ; but then, it was a beginning. All things must have a beginning. In the light of later events, it is difficult to call this initial attempt an exhibition ; but such it was, and a special Chrysanthemum show at that. It was held on May 7, 1872, and the exhibits consisted of two stands of eighteen blooms each. Auckland, Napier, Wellington, Nelson, Christchurch, Timaru and Dunedin are all famous for their Chrysanthemums, and there is much encouraging work going on in smaller centers. The last exhibition, held under the auspices of the Christchurch Horticultural Society, would have been a very grand affair had not a great many of the exhibits suffered rather severely from a prolonged period of wet weather. But even as it was, there were many fine blooms of the popular varieties. Some varieties recently imported from England and America received a large share of attention. Among others I noticed as being particularly good, Viviand Morel, Wm. Tricker, Alberic Lunden, W. W. Coles, R. C. Kingston, Louis Boehmer, Lilian B. Bird, C. E. Shea, Etoile de Lyon, W. H. Lincoln, Mdme. Baco, Eynsford White, Miss Annie Hartshorn and Avalanche. The growers of exhibition blooms have pretty generally adopted the Molyneux course of culture, and good decorative specimens of dwarf habit are obtained by cutting down the plants to within six inches of the soil about mid-summer. There are several parties interested in the production of seedlings in various parts of the country, but I have had no recent reports of their work. Two of my own seedlings are very promising. One of these, which I have named Rosy Morn, has florets curled and interlaced in the form of a ball. The other resembles Edwin Molyneux a good deal, the center very full

—John Dutton.

Christchurch, New Zealand.

PHILADELPHIA.

NATURAL SIZE.

AMERICAN VARIETIES OF 1895.

IT is possible there are some new varieties of American origin which are not named in this list; but while no effort has been spared to make it complete and reliable, the compiler will be glad to have particulars of others which should find a place here:—

Autumn Leaves (*Spaulding*).—Stem strong and erect. Flower large and full. Florets straight and spreading; broad; heavy substance; creamy white, mottled red and tipped light yellow.

Brigand (*Spaulding*).—Stem dwarf, straight and strong. Flower large and full. Florets somewhat reflexed; deep crimson in color.

Bronze Giant (*Spaulding*).—Stem robust and erect. Flower very large and full. Florets incurved; broad; firm of texture; yellow, shaded red.

Burt Eddy (*Vaughan*).—Stem stout and erect. Flower very large and full. Florets reflexed; the dull purple color is poor.

Camille d'Arville (*Spaulding*).—Stem stout and erect. Flower of medium size; very full, and of good form. Florets straight; strong in texture; white, tinged salmon.

Chipeta (*Smith & Son*).—Stem four and a half feet high, strong and erect. Flower very large and full. Florets well incurved; color light bronze.

Crystalina (*Vaughan*).—Stem stout and erect. Flower medium size, full. Florets narrow; medium in substance, and of pure white color.

Dean Hole (*May*).—Stem three and a half feet high, strong and erect. Flower very large; full and of good form. Florets incurved; broad; pale pink.

Diavola (*Spaulding*).—A variety with very large flowers. Florets spreading; color creamy white, marked and shaded with red and yellow.

Dr. W. A. Wakeley (*Spaulding*).—Stem stout and erect. Flower large, full and globular. Florets incurved; broad; heavy substance; light bronze.

Edith Smith (*Spaulding*).—Stem dwarf and of good strength. Flower large and full. Florets reflexed, those in the center incurved; broad; pure white.

E. M. Bigelow (*Dorner & Son*).—Stem straight and strong. Flower of large size; very full. Florets regularly incurved, and of a deep reddish-crimson shade.

Emma N. Crosby (*Spaulding*).—Stem dwarf and solid. Flower medium size, full and of good form. Florets incurved, the lower ones reflexed; color rich yellow.

Esther Heacock (*Spaulding*).—A yellow sport from Ada Spaulding, with the characteristics and excellent qualities of that variety.

Experiment (*Spaulding*).—Stem of medium height, strong and erect. Flower medium size; full. Florets spreading and twisted; color soft pink.

Ezeta (*Smith & Son*).—Stem four feet high, quite strong. Flower medium size, full and of good form. Florets spreading; firm in texture; bright yellow. See plate.

F. L. Atkins (*Pitcher & Manda*).—Stem strong and erect. Flower large and full. Florets reflexed; very long; broad; silvery-white in color.

Fred Walz (*Bock*).—Stems stout and erect, about three feet in height. Flower medium size; very full and of good form. Florets partially incurved; color pale pink.

Gold Dust (*Hill & Co.*).—Stem three and a half feet high, strong and erect. Flower medium size; very full. Florets incurved; golden yellow.

Hallowe'en (*Hill & Co.*).—Stem four feet high, vigorous and erect. Flower very large, full and deep. Florets incurved; broad; strong in substance; color dull pink.

Helen Bloodgood (*Spaulding*).—Stem strong and erect. Flowers very large; full; perfect in form. Florets incurved; firm in texture; color pink.

H. W. Rieman (*Hill & Co.*).—Stem four feet high, stout and erect. Flowers large and full; golden yellow. A cross between Wm. H. Lincoln and Mrs. L. C. Madeira.

Jayne (*Vaughan*).—Stem strong and well furnished with foliage. Flowers high and full, with broad, incurved florets; color deep pink.

J. E. Lager (*Pitcher & Manda*).—Flowers of medium size; full and of good form. Florets reflexed; medium in width; color bright yellow.

Jennie Falconer (*Spaulding*).—Stem dwarf, strong and erect. Flower large; full; very attractive. Florets well incurved; broad; color bright yellow.

J. H. Troy (*Pitcher & Manda*).—Flower very large and full. Florets spreading; broad; heavy in substance; color pure white. Very early. See plate.

Latest Fad (*Spaulding*).—Stem strong and erect. Flower very large and full. Florets reflexed; very long; broad; rich yellow in color, with crimson and bronze variegations. See plate.

Lottie Alter (*Spaulding*).—A large bloom of good quality. Florets incurved; firm in texture; color pure white.

Marie Valleau (*Spaulding*).—Stem strong and erect. Flower large, full and of good form. Florets incurved; broad; heavy in texture; soft pink.

Marion Abbott (*Spaulding*).—Stem rather weak. Flower large and full; graceful in form. Florets well incurved; medium width and texture; pale pink.

Maud D. Reynolds (*Spaulding*).—A good large flower. Florets informally incurved, the lower ones reflexed; strong in substance; bright yellow.

Millbrook (*Dorner & Son*).—Stem about three feet in height, stout and erect. Flower very large and decorative. Florets long and drooping; light bronze.

Miss Elma O'Farrell (*Dorner & Son*).—Stem four feet high, straight and strong. Flower large and full. Florets reflexed, and of bright reddish color.

Miss Georgiana Pitcher (*Pitcher & Manda*).—Stem dwarf, stout and erect. Flower of medium size; very full. Florets incurved; strong in texture; bright yellow.

Miss Georgie Crompton (*Spaulding*).—Stem strong and erect. Flower large and full. Florets incurved; broad; deep yellow.

Miss Gladys Spaulding (*Spaulding*).—Stem stout and erect. Flower very large and full. Florets incurved; excellent in texture; pure white color.

Miss Louise D. Black (*Hill & Co.*).—Stem about four feet high, strong and erect. Flower large, very deep and full. Florets incurved, and of reddish-orange color.

Miss M. M. Johnson (*Hill & Co.*) —Stem three feet high, erect. Flower medium size; full and graceful; florets medium width; irregularly incurved; deep yellow. See plate.

Mrs. Chas. Woolsey (*Henderson & Co.*).—An irregular spreading flower of good decorative character; very early; pure white.

Mrs. Henry Robinson (*Pitcher & Manda*).—Stem good. Flower large, full and exceptionally fine in form. Florets incurved; white.

Mrs. Higinbotham (*Spaulding*) —Stem strong and erect. Flower very large; full and graceful. Florets irregularly incurved; broad; hairy; bright pink.

Mrs. H. L. Romig (*Graham*).—Stout stem about four feet high. Flower medium size, very full. Florets incurved; creamy white.

Mrs. H. W. Emerson (*Dorner & Son*).—Dwarf stem, stout and erect. Flower very large and full. Florets extra wide; reflexed irregularly; bright yellow.

Mrs. J. H. White (*Spaulding*) —Stem dwarf, strong and erect. Flower large and full. Florets reflexed; medium in texture; color deep crimson.

Mrs. Moses J. Wentworth (*Vaughan*).—Stem strong and straight. Flower large and full. Florets irregularly incurved; weak in texture; deep yellow.

Mrs. M. R. Parker, Jr. (*Spaulding*).—Stem dwarf, strong and erect. Flower large and full. Florets incurved; broad; firm in substance; deep pink, reverse of lighter shade.

Mrs. S. T. Murdock (*Dorner & Son*).—Stem from three to four feet high, strong and erect. Flower of good size and substance; color pale rose.

Mrs. T. E. Weidersheim (*Graham*).—An early variety of dwarf growth. Flower of medium size; fine form; light pink color.

Mrs. Wm. H. Hurley (*Graham*).—Dwarf habit and stiff stem. Flower large and loose; florets reflexed, and of deep orange yellow color.

Mrs. Wm. H. Rand (*Vaughan*).—A very decorative and graceful variety. Flowers large and full. Florets narrow, and of light texture; color deep yellow. See plate.

Nellie Elverson (*Hill & Co.*).—Stem four feet in height, stout and erect. Flower extra large, deep and full. Florets incurved; firm in texture; color bronze.

Nemesis (*May*).—Stems two and a half feet high, strong and erect. Flower medium size; full and very decorative. Florets spreading, medium width, color delicate pink.

Nyanza (*Smith & Son*).—Stem three and a half feet high, very strong. Flower large and full. Florets loosely incurved; color bright crimson, golden reverse.

Oakland (*Dorner & Son*).—Stem from four to five feet high, straight and strong. Flower massive and full; globular in form. Florets somewhat reflexed, and of a bright terra cotta color.

Octoroon (*Spaulding*) —Stem dwarf, strong and erect. Flower large and full. Florets incurved; firm in texture; bright red.

Olympus (*May*).—Stem four feet high, moderately strong. Flower very large and full. Florets informally incurved; broad; strong in texture; white, shaded pink. See plate.

Parting Guest (*Spaulding*).—A very late variety. Stem dwarf, stout and straight. Flower very large and full. Florets incurved; white, tinged rose.

Philadelphia (*Graham*).—Strong in growth, with erect stems about four and a half feet high Flower large and globular. Florets pure white, tipped lemon-yellow. This variety is the result of a cross between Marguerite Graham and Mrs. C. Lippincott. See plate.

Radiance (*Hill & Co.*).—Stem three and a half feet high, strong and erect. Flower of good size; full and perfect. Florets incurved; broad; firm in texture; bright yellow.

Shavings (*Vaughan*).—The flower of this variety is interesting, but it has little to recommend it from a commercial or decorative standpoint.

Sunrise (*May*).—Stem three feet high, stout and erect. Flower large and full. Florets reflexed, a few in center incurved; very broad; bright terra cotta red.

Thalia (*Smith & Son*).—Stem four and a half feet high, good and strong. Flower large and full. Florets spreading; firm in texture; pale pink, shaded with rose.

The Egyptian (*Hill & Co.*).—Stem four feet high, stout and stiff. Flower very large, deep and of excellent form. Florets incurved; firm in texture; and of a striking shade of dark red.

Trilby (*May*).—Stem three and a half feet high; good in strength. Flower large, full and of graceful form. Florets spreading; pure white.

W. B. Dinsmore (*Pitcher & Manda*).—Stem stout and erect. Flower of medium size; very full. Florets irregularly incurved; strong in texture; color deep yellow.

Zipangi (*Smith & Son*).—Stem five feet in height, strong and erect. Flower very large and full. Florets partially incurved and reflexed; color crimson lake, buff reverse.

Zulinda (*May*).—Stem three feet high, stout and erect. Flower very large and full. Florets well incurved; broad; strong in substance; bright pink, reverse of lighter shade.

—M. B.

NOTES AND GLEANINGS.

Cape Difficulties —About ten years ago, when the phylloxera was beginning to show the damage it could do, our Cape legislators thought it prudent to prohibit the importation of plants of all kinds under any condition. That law remained in force until two years ago, when it was modified so as to allow bulbs, potatoes, etc., to be imported, also plants packed without earth. During the past year there has been a further relaxation, and plants are now allowed to land in soil to be washed out on arrival. The result of these laws, which were stringently carried out, has been that except the miserable varieties introduced long ago, we have had no Chrysanthemums at all until within the past year. Many kinds have now been imported, but these, as also their local treatment, are still in the experiment stage, though we are hopeful of their becoming quite popular here. I expect you will find it the same throughout South Africa, except in Natal, which was not included in the above legislation.—*Thos. R. Sim, King William's Town, South Africa.*

Boston Exhibitions.—The first record we have of the exhibition of Chrysanthemums in this country was in 1830, when seventeen varieties were shown at the exhibition of the Massachusetts Horticultural Society. The first prizes were offered in 1861, to the amount of seventeen dollars only. In 1868 the exhibition was first styled the Chrysanthemum Show, and the prizes were increased to fifty-five dollars. These had all been Saturday shows, from twelve to three o'clock, but in 1879 it was held on Wednesday from noon to ten o'clock in the evening, with prizes to the amount of one hundred and fifty dollars. In 1882, though planned for only one day, it was so good and so much interest was taken in it that it was kept open two days, and this was continued until 1886, when it lasted three days In 1890 it was planned for three days but was kept open four days, as has been done since. Until 1888 fruits and vegetables were shown with the Chrysanthemums, but that year it was devoted wholly to these flowers.—*Robert Manning, Boston, Mass.*

Historical Jottings.—My recollection of the Chrysanthemum dates back over sixty years. We had then in our gardens Tasselled Yellow, Incurved Pink, Incurved Red, White and a few others. About 1838 (I write from memory) Messrs. Chandler & Sons, of Vauxhall, London, England, imported a set of seedlings from France, and this gave an impetus to their cultivation. The Messrs. Chandler followed the same line of work for some years, offering new varieties annually. Mr. Salter, then of Versailles, France, next appeared in the field, and likewise had sets of new sorts for sale every year up to the revolution of 1848, when he removed to London. His subsequent work, and the introductions in which Mr. Fortune had been instrumental in his various trips to China and Japan, are matters of common knowledge. In relation to the introduction of the plant into this country, I can give but little information. When I came in 1851, I found a very good collection grown by Mr. Robert Buist, of Philadelphia. These were Chinese and pompon varieties. The Japanese were not known till a few years later. When Japan was opened up to commerce, Robert Fortune, J. G. Veitch and Thomas Hogg sought out the worthy novelties, and what we now know as Japanese varieties were soon to be found in both American and European gardens.—*John Saul, Washington, D. C.*

Fragrant Varieties.—A variety whose flowers possess every worthy feature except perfume can be crossed with one in which the flowers are fragrant but otherwise inferior, thus producing, it may be, a variety with the desirable characters of both parents. There is here a wide field for useful and perhaps profitable experiment, and one in which the labors and pleasures may be shared by the humblest grower of plants. The best fragrant Chrysanthemums known in gardens—and the list is the most complete yet published—are as follows: Chrysipe, a good flower with incurving florets of bright rosy-purple color, edged white; Cullingfordii, a beautiful velvety crimson, florets reflexed; Dr. Sharpe, rich amaranth purple, florets reflexed; Exquisite, a pure white single-flowered variety, with long, narrow florets; Faust, one of the best incurved sorts, florets bright purple; Gus Harris, a single flower of medium size, outer florets bright lilac; Miss Annie Manda, an interesting and very beautiful variety, flowers pure white and hairy; Mrs. Langtry, flowers single and of pale rose color; Nymphæa, a pure white single variety, florets incurving with age; and Progne, deep purple flowers of medium size, florets reflexed. The last named variety is undoubtedly the best Chrysanthemum for fragrance in cultivation. It blooms most profusely, and the odor is strong, closely resembling that of the Violet. The fragrance of the others is sweet and agreeable, but indescribable, except in Dr. Sharpe, which takes after Progne, and in Gus Harris, with its Hawthorn-like perfume.—*Weekly Budget.*

Some Early Seedlings.—The first seedlings raised around Boston were those of Dr. H. P. Walcott, of Cambridge, who placed on exhibition some eight or ten plants in small pots. In some of these plants the flowers were single, and in others double or semi-double. As I remember them, they seemed to have been very inferior, measured by our present standard; but they gave new life to Chrysanthemum culture. They set the ball rolling, and that it has continued to roll with most satisfactory results is evident at every succeeding exhibition in the land. Up to about 1884, there had been nothing done in the way of artificial fertilization of Chrysanthemums, and it had even been claimed that it was impossible to accomplish cross-fertilization upon them. I determined to try the experiment, and it resulted in the production of President Hyde H. A. Gane and several other varieties. We had the variety Source d'Or at that time, and I admired its habit

very much, and thought that if a bright yellow could be obtained with the same habit, it would be a fine thing. I therefore used this variety as the seed parent, and obtained pollen with which to fertilize it from the old bright yellow variety Fulton. This resulted in quite a number of seedlings, among which was the one afterward named President Hyde. The variety H. A. Gane, was the result of a cross between Source d'Or and a pink French variety. These seedlings were placed on exhibition in Boston in the autumn of 1886, and were the first exhibited in this country from hand fertilized seed.—*Arthur H. Fewkes, Newton Highlands, Mass.*

A Chemical Analysis.—During the past six years Dr. A. B. Griffiths, F. R. S., (Edin.), has made complete analyses of a number of garden flowers, and I have now been favored by him with an analysis of the Chrysanthemum, which he has conducted during the past season. The analysis is on the entire plant in a state of maturity, and was obtained from a mixture of several plants, all in the same condition of growth.

Composition of the Chrysanthemum in Parts per 100 of the Ash.

	Per cent.
Potash	16 23
Soda	10.39
Lime	26.28
Magnesia	10.22
Phosphoric acid	19.52
Iron oxide	3.66
Sulphuric acid	4.65
Silica	5.99
Chlorine	3.06

The fresh plants contained of albuminoid nitrogen 2.92 per cent. The data thus given are remarkable in several particulars, and show that if healthy, vigorous, and richly-blooming plants are to be obtained, the plant-food supplies must be of a complete nature, and in an easily assimilable form for sustenance and nourishment. In the first place, the large quantity of albuminoid nitrogen shows pretty clearly that unless nitrogenous food is supplied the plants will starve. Many persons do not appear to realize how plants languish in such a small quantity of soil as is possible to be got into an ordinary garden pot; how the plants sicken and fall victims to fungi, etc., for want of nourishment. The ash constituents show the absolute necessity for a very full and complete supply of mineral ingredients, and the drain there is upon the soil for the five elements placed first on the list. Potash and phosphoric acid are not in such large proportion as in some other garden flowers analyzed by Dr. Griffiths, but soda, lime, and magnesia are greatly in excess. In regard to the food supply of the Chrysanthemum, guano should prove a useful manure, to which bone meal might be added, applying about one-fourth of an ounce to each five pounds of soil. The following manurial mixtures may be recommended:

	Parts.
Nitrate of potash (saltpetre)	1
Phosphate soda	2
Sulphate iron	0¼
Magnesia (Epsom salts)	2
Superphosphate of lime	3

Or this—

	Parts.
Kainit	3
Sulphate iron	0¼
Superphosphate	3
Nitrate soda	1

Apply one-fourth of an ounce of the mixture to each four pounds of soil, well incorporated before potting. The plants may be watered every three weeks with the above mixtures, putting one-fourth of an ounce of the manure to each gallon of water. This may be given up to the period of flowering. Sulphate of iron imparts a dark green color to the leaves, and tends to keep the plants free from disease.—*J. J. Willis in the Gardeners' Chronicle.*